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Intel's CTO on 64-bit computing and more. PAGE 38

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WALL ST. AIMS FOR ONE-DAY TRADING

Brokerages run IP test, but plan faces doubts

BY LUCAS MEARIAN
NEW YORK

A consortium of 125 financial services firms claims to be in the final stages of piloting an IP network that will allow brokerages and investment banks to settle stock trades and other transactions in a single day.

Such an accomplishment could represent a quantum leap in time and cost savings from the current 72-hour window, which itself was the result of a multibillion-dollar effort to shorten a five-day process just a few years ago.

Still, many Wall Street IT executives question whether banks, brokerages and clearinghouses have the IT infrastructures necessary to support the increased data flow required for straight-through processing or same-day clearance. Many organizations have struggled to meet three-day settlement requirements using time-intensive batch processing techniques. If securities shops can't get past those hurdles now, the question becomes whether the return on investment from their efforts justifies spending millions of dollars to build same-day infrastructures.

Trading, page 53



THE ASSOCIATED PRESS

Starting Friday, airlines face the daunting task of screening every checked bag on every flight. Matching bags to passengers using wireless LANs is one option, but the task of securing those networks is just as daunting.

ROI: People Count

Balancing personnel, payroll and training to achieve maximum ROI



COLIN JOHNSON

Your company's most valuable, and often most costly, IT resource is its staff – so what are you doing to protect your investment in human capital in today's turbulent economy? In a special report that begins on page 24, learn how forward-thinking companies are using sabbaticals, reduced workweeks and other alternative approaches to avert costly and demoralizing layoffs.

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Wireless LANs: Trouble in the Air

BY BOB BREWIN, DAN VERTON AND JENNIFER DiSABATINO

AS THE AIRLINE INDUSTRY scrambles to meet a Jan. 18 deadline to screen every checked bag for explosives, security experts, analysts and government officials are raising serious concerns about the security of wireless technology that's integral to the effort.

INVESTIGATIVE REPORT

At issue is the adoption by airlines of industry-standard 802.11b, or Wi-Fi, wireless LANs operating in the 2.4-GHz band. These systems, which are widely viewed as inherently insecure, are being used to support such applications as bag matching and curbside and roving-agent check-in.

The concerns appear to be justified, based on two investigations that were conducted last week by professional security firms that analyzed airline wireless LAN systems at Denver International Air-

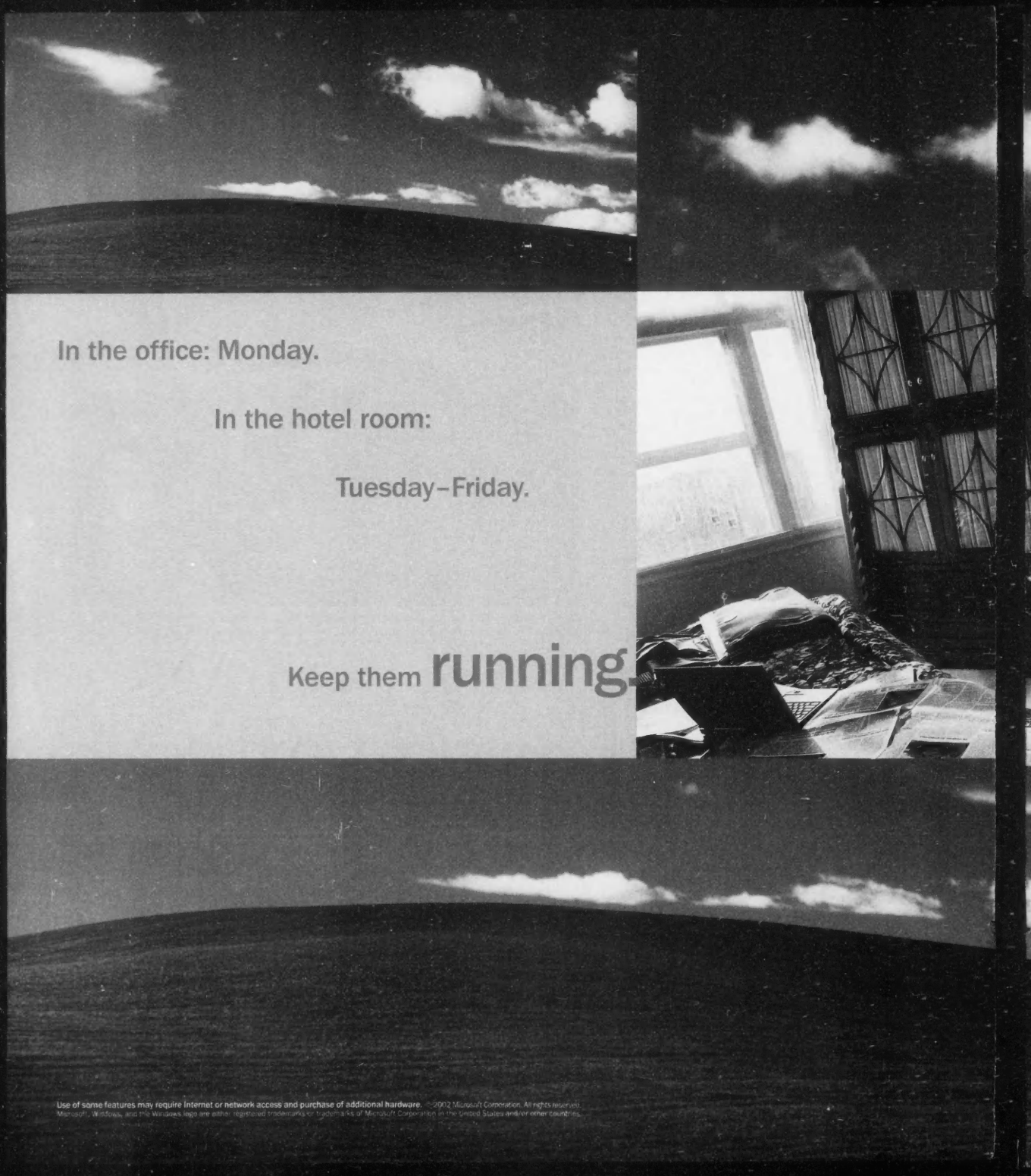
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Inside

■ Chaos and confusion: The U.S. government has given the airlines no clear direction on what technologies to use or how they should work together to improve security, critics charge. PAGE 6

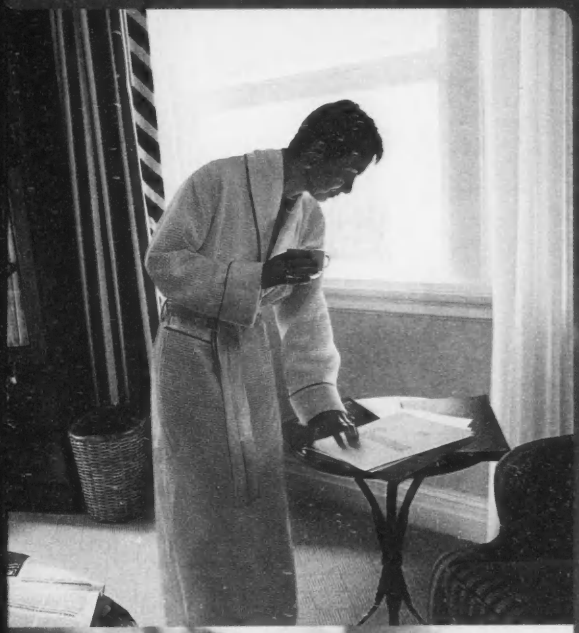
■ FAQ: The technology issues and requirements within the Aviation and Transportation Security Act of 2001. PAGE 7

■ Beyond wireless: At Boston's Logan International Airport, facial-recognition and document-authentication technologies are being tapped to boost security. PAGE 8



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AMANDA DUFFY

SOLVING CYBERCRIME

Computer forensics experts use an array of tools and techniques to nab cybercriminals both inside and outside affected organizations. **PAGE 36**



ERIC MILLETTE

FORENSIC DETECTIVES

Whether you call them cybercops or digital sleuths, computer forensics investigators are in high demand for solving systems crime and helping companies protect the bottom line, say IT executives like PayPal's Ken Miller. **PAGE 32**

JANUARY 14, 2002

COMPUTERWORLD THIS WEEK

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6-8 Special report: Concerns are being raised about the security of wireless LANs used by airlines for applications such as bag matching and curbside check-in.

10 IT workers at Tyson Foods are working overtime to integrate the operations of a meatpacker that the company bought in September.

12 Microsoft CEO Steve Ballmer says the company's focus this year is on Web services, XML and .Net.

12 Microsoft is investigating reports of a new security hole in recent versions of its Internet Explorer Web browser.

16 Aircraft parts distributor Aviall credits its new IT systems for helping it win a $3 billion contract from Rolls-Royce.

Quick Link — For breaking news, updated twice daily, visit *Computerworld.com*:
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23 Joe Auer says IT procurement managers often fail to look beyond their organization's immediate needs by "sidetracking" end-user and wider-ranging enterprise needs.

24 Layoffs might be the quickest route to achieving short-term cost savings, but the long-term effects of losing valuable intellectual capital and cutting investments in IT training can be devastating. Some companies are considering alternative cost-savings approaches.

30 Training budgets are still on the rise as IT departments are looking beyond the current economic doldrums to invest more heavily in project management, security and soft-skills acumen.

34 Workstyles: A look at systems administrator Bob Johnston, who runs the IT department at $70 million advertising and public relations firm CJRW — by himself.

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35 Microsoft is probably calling one of its new features "fast user switching" because Windows XP still isn't a multiuser system, says columnist Nicholas Petreley.

38 Intel's chief technology officer, Pat Gelsinger, gives his view of emerging technologies that will have an impact on corporate IT.

40 Digital asset management technology helps the Shoah Foundation ensure that the stories of Holocaust survivors will live on.

43 Hands On: Upgrading a laptop hard drive is harder than it should be, according to reviews editor Russell Kay.

44 Security Journal: Installing a system for e-signatures seems like a good idea, but Vince Tuesday finds that at least one user is unclear about the concept.

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20 Maryfran Johnson takes a humorous look into the future after Bill Gates proclaims that Windows XP will be the "digital hub" of the home.

20 Pimm Fox says IT should take a bow for its unprecedented triumph of leadership during the successful replacement of 12 currencies with the euro.

21 David Moschella believes Web services will thrive but won't live up to the hype we're hearing from vendors.

54 Frank Hayes urges IT leaders to heed a new report that underscores the vulnerabilities of the nation's IT infrastructure and to help boost security spending — now.

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Wireless LANs: Trouble in the Air

Continued from page 1

port and San Jose International Airport.

The analysis in Denver was conducted Jan. 9 by a security firm that didn't want its identity disclosed. It revealed that American Airlines Inc. operated wireless LANs totally in the clear without any encryption in its portion of the DIA terminal.

INVESTIGATIVEREPORT

The vulnerability of the American Airlines wireless LAN networks was highlighted by the fact that the security specialists witnessed an intrusion while conducting their monitoring. According to a report furnished to *Computerworld*, security of the wireless LANs supporting Fort Worth, Texas-based American's curbside check-in stands was further compromised by the fact that the IP address of the curbside terminal was prominently pasted on the monitor.

Except for an administrative network operated by the Denver International Airport authority itself, none of the networks monitored by the security specialists had turned on even the simplest form of encryption: the 40-bit Wired Equivalent Privacy encryption algorithm.

Thubten Cumerford, CEO of Westminster, Colo.-based security firm White Hat Technologies Inc., said airlines that operate unprotected 802.11b wireless networks "are putting themselves and our nation's security at risk." Even when encryption is enabled, wireless LANs "are a serious liability," Cumerford added.

A scan of wireless networks at San Jose International Airport on Jan. 10 produced similar results. Jonas Luster, cofounder of D-fensive Networks Inc. in Campbell, Calif., which conducted the analysis in San Jose, said the wireless LANs there had few safeguards against intruders.

Luster said he was easily able to pick up signals and sensitive network information emanating from the wireless LANs belonging to American Airlines and Dallas-based Southwest Airlines Co. American's curbside check-in operations could be monitored, Luster said, and Southwest's networks were issuing information from back-end systems, including at least three Unix servers running the Solaris operating system.

RIP Weakness

"In a matter of minutes, you could sniff out whatever you wanted," said Luster, who added that the routing infrastructure at both airlines was open to exploitation. Routing Information Protocol (RIP), a high-level language that transmits routing updates at regular intervals, can be modified easily to assist a hacker, said Luster. "By injecting a wrong RIP response, I could declare myself a legitimate, authoritative, powerful node on the network," said Luster.

Although American acknowledged the vulnerability of the 802.11b standard, it downplayed the seriousness of the situation.

"This particular issue is a very temporary one and a very noncompromising one," said American CIO Monte Ford. American is already on track to roll out a proprietary security system to replace 802.11b well before an industry-standard improvement is adopted, Ford said. And he added that even if a hacker was able to locate passwords, he would still be unable to access applications and databases. "A



THE ASSOCIATED PRESS

A SECURITY ANALYSIS found American Airlines' wireless LAN at the Denver airport to be unprotected.

Chaos and Confusion

Airlines are implementing haphazard security systems to satisfy a political agenda because the government has given them an impossible task without any clear direction on how to effect a change, some critics charge.

"Airlines right now are in total chaos. They're in chaos because they're trying to do something that can't be done," said Michael Boyd, president of aviation industry consultancy The Boyd Group/ASRC Inc. in Evergreen, Colo.

Explosives-detection systems machines are unreliable, he said, and can't possibly be put in place by the end of the year as mandated by Congress. And the proposed positive bag-matching system will slow traffic in hub airports by 20%, Boyd said.

Henry Harteveldt, an analyst at Forrester Research Inc. in Cambridge, Mass., is equally concerned. "One [airline employee] described it as they are in positive-bag-match hell," he said. "It's as much an operational issue as a technological one."

And the government has given no clear direction to the airlines about what technologies to implement or how they might work together, critics charge.

"None of the systems interact with one another," Boyd said. Realistically, though, there isn't even a plan to share data with a government database. "How to share info with a federal database. We are so far from that, it's not even worth discussing," he said.

Airport officials are also complaining of a lack of guidance from the FAA and the Transportation Security Agency.

In an article posted at the site of the American Association of Airport Executives & Airports Council International – North America, Doug Kimmel, manager of Illinois' Williamson County Regional Airport, said, "There has been little to no communication as to what actually needs to be changed or done differently at this airport. Instead, we have been asked by FAA what we need in order to comply. Hard question to answer when we still don't know what we're complying with."

– *Jennifer DiSabatino*

password is not a free ticket to our network, by any stretch of the imagination," he said. "They can just see points on the network. They can't get into applications."

Ford said American doesn't plan to use positive bag matching to meet the Jan. 18 deadline Congress has set for the airlines to implement some means of screening all checked baggage. It does plan to start using a bag-matching system later this year, Ford added.



TOOLS used by hackers.

American Airlines' visibility is at least partly attributable to the fact that it has been ahead of the curve in wireless LAN deployment.

Delta Air Lines Inc., United Air Lines Inc. and Southwest Airlines all declined to comment for this story, citing security concerns. Northwest Airlines Inc. and Continental Airlines Inc. didn't return calls seeking comment by deadline. In any case, there appears to be no coordinated effort among the airlines to address wireless security issues.

For its part, American currently uses its wireless LANs only for curbside check-in and roving agents, and Ford said that even if intruders penetrated the network, they could do little damage. That's because American's core systems are hosted by Fort Worth, Texas-based Sabre Inc. on an IBM transaction processing facility (TPF) system that's generally viewed as extremely difficult to hack because of the rigid and arcane structure of TPF.

"It's not possible that you could get into the kinds of things that could do damage," said Richard Eastman, an airline industry consultant at Newport Beach, Calif.-based The Eastman Group.

The TPF-based reservation system is a deep matrix, with passwords embedded in each level, explained Michael Anderson, director of airport systems at Sabre.

But that doesn't satisfy Joe Weiss, vice president of the network applications division at Annapolis, Md.-based Aeronautical Radio Inc. (Arinc), a communications services provider owned by a consortium of airlines. Weiss said he's concerned that a hacker could use an unprotected wireless LAN to hop into core airline operational systems. These systems include flight operations, bag matching and passenger reservations. Flight operations systems manage such vital functions as refueling, maintenance and flight dispatch, Weiss said.

Weiss expressed concern that access to a bag-matching system could allow an attacker to

Continued, page 8

Bliss-less Ignorance

The skills required to secure wireless networks aren't keeping pace with the rapid build-out of wireless infrastructures, a recent survey found.

Despite growing concerns about the security of corporate wireless networks, nearly 20% of survey respondents said they lacked needed knowledge to deal with the problem, and 54% said they were only "somewhat knowledgeable." The survey of 1,200 security professionals was conducted by *Information Security* magazine, published by Herndon, Va.-based security firm TruSecure Corp.

"These are all security professionals who are saying this. When you back this out to the larger [IT] population, there still seems to be somewhat of an 'ignorance is bliss' attitude" relating to wireless security, said Andrew Brinley, editor in chief of *Information Security*. Inadequate security in the Wireless Equivalent Privacy (WEP) protocol and in handheld devices continues to be a major concern for wireless users, Brinley said.

The WEP algorithm is used to protect wireless networks based on 802.11, the current wireless LAN standard, from electronic eavesdropping and unauthorized access. But a survey by researchers at the University of California, Berkeley last year, along with other reports, has revealed a number of flaws in WEP.

The Institute of Electrical and Electronics Engineers Inc. this year will introduce a new standard, 802.1x. It will use encryption keys that are unique for each user and each network session, and it will support 128-bit key lengths. It will also support the use of Remote Authentication Dial-In User Service, a central repository of authentication information for the network, and Kerberos, an authentication protocol that enables dynamic key changes.

Most of the major wireless vendors have announced plans to support the new standard with products due early next year. In fact, Cisco Systems Inc. has already introduced Lightweight Extensible Authentication Protocol (LEAP) for its Aironet devices. With LEAP, client devices dynamically generate a new WEP key instead of using a static key as part of the log-in process.

The fact that wireless frequencies can be easily jammed and communication tapped without physical access are major concerns, said Daniel Lange, an IT strategist at BMW Group in Munich, Germany. "WEP is seriously flawed [and] thus needs to be considered insecure. Communication can be compromised just by listening remotely," Lange said.

BMW uses 802.11-based wireless LANs at two of its manufacturing facilities in Germany.

"There is no standard for securing 802.11 [wireless LANs] now, only incompatible vendor-specific implementations," Lange said.

"WEP has come under a lot of criticism for its lack of security. But [even a WEP-enabled network] is still better than nothing" when it comes to securing wireless access, Brinley said.

– Jaikumar Vijayan and Dan Verton

Quick Link To read *Information Security*'s complete survey, visit **www.computerworld.com/q?a1470**

For UC Berkeley's report on WEP flaws, go to **www.computerworld.com/q?a1490**

FAQ: On Legislating More Secure Air Travel

Under the Aviation and Transportation Security Act of 2001, airlines by Jan. 18 must ensure that no checked bag on a U.S. domestic airline flight contains explosives. What are their options for compliance?

■ They can scan bags through explosives-detection systems.

BUT . . .

There are only approximately 160 such systems in use in the U.S., and Congress hasn't appropriated the $5 billion needed to buy the 2,000 machines needed to equip all U.S. airports. And the deadline didn't allow enough time for installation of the automobile-size machines.

■ They can perform Positive Passenger Bag Match, which shows that each bag loaded in an aircraft hold matches a passenger in a seat (see diagram, page 8).

BUT . . .

There aren't enough automated bag scan systems in place, and those that do exist rely on inherently insecure wireless LAN systems to send data reads from a bar code on a bag tag to match up with a passenger manifest.

■ They can search by means of bomb-sniffing dogs.

BUT . . .

There aren't enough trained dogs to handle the task.

■ They can manually search every checked bag.

BUT . . .

There aren't enough trained personnel on hand to search them.

SO . . .

The Transportation Security Agency has recommended a combination of these high- and low-tech approaches, maintaining that it will allow the airlines to meet the mandates of Congress.

What technology enhancements does the act require the airlines to undertake to make air travel more secure? The airlines must:

■ Ensure that unauthorized personnel can't gain access to computerized airline reservations systems.

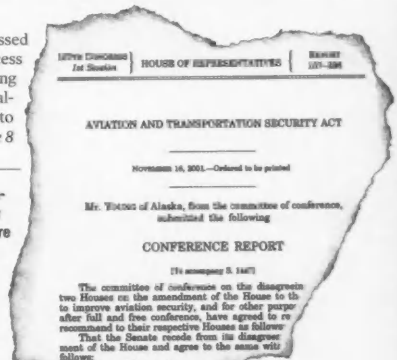
■ Electronically transmit advance passenger and crew manifests on all international flights inbound to the U.S.

■ Use the FAA's Computer-Assisted Passenger Prescreening System (CAPPS) to screen all passengers before they board an aircraft. Currently, CAPPS is applied only to selected passengers.

Are the airlines being encouraged by Congress to explore any other high-tech systems to improve security? Yes. Such suggestions include:

■ A Trusted Passenger Program that would provide a biometric or other tamper-proof ID to members of frequent-flier programs and other travelers who can pre-establish their bona fides for participation in the program. Besides providing a better way to positively identify these trusted passengers, the program would speed up check-in by "allowing security screening personnel to focus on those passengers who should be subject to more extensive screening."

■ Voice-stress analysis systems to help better identify passengers who could pose a threat to an aircraft.



AVIATION AND TRANSPORTATION SECURITY ACT

November 16, 2001.—Ordered to be printed

Mr. TODD of Alaska, from the committee of conference, submitted the following

CONFERENCE REPORT

The committee of conference on the disagreein two Houses on the amendment of the House to th to improve aviation security, and for other purpo after full and free conference, have agreed to re recommend to their respective Houses as follows:

That the Senate recede from its disagreement of the House and agree to the same wit follows:

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■ Enhanced communications systems to relay real-time video from an aircraft to controllers on the ground.

How much money is Congress appropriating? The act provides $250 million in funding over five years (2001-06) for research on advanced explosives-detection systems machines, development of integrated systems for airport security and improved technology to screen cargo.

– Bob Brewin

Configuration of an Automated Bag-Matching System

Senior government officials want to set high security standards for wireless LANs that support airport bag-matching systems. The concern is that an attacker could penetrate the network and potentially manipulate data.



Continued from page 7

manipulate the system to show that luggage belonged to a boarded passenger when in fact it did not. This concern is one reason Arinc plans to abandon the 802.11b-based bag-matching system it operates as a shared resource system for all carriers with international flights at San Francisco International Airport. Arinc said it will switch to a private wireless system operating in the 800-MHz band. That system will be based on Integrated Digital Enhanced Network (IDEN) voice and data terminals developed by Schaumburg, Ill.-based Motorola Inc.

IDEN provides more robust security than wireless LANs, Weiss said, including software keys for each terminal. Arinc plans to encrypt the network traffic as well.

Presidential Concerns

The security weakness of wireless LANs used throughout the nation's critical industries, including airlines, hasn't gone unnoticed at high levels of the Bush administration. A senior White House official said wireless security initiatives are at the top of the 2002 agenda for the president's newly established Critical Infrastructure Protection Board. At least one white paper is in development that will examine wireless LANs and the interconnections between wireless devices and critical infrastructure systems, such as Federal Aviation Administration networks.

INVESTIGATIVE TEAM
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Researchers: **Allison Wright, Gussie Wilson**
Editor: **Don Tennant**

The U.S. Department of Transportation (DOT) and two of its key agencies — the FAA and the newly formed Transportation Security Agency (TSA) — plan to take a critical look at wireless LAN security over the next year. Mike Brown, director of information security at the FAA, said that in this new security-conscious era, airline wireless systems are subject to increased scrutiny.

The DOT has formed a "go team," led by Associate CIO Lisa Schlosser, that will examine existing airline wireless systems, including LANs. In partnership with the FAA, the TSA and private industry, it will develop security standards and define a general wireless architecture, Brown said.

Though American Airlines downplayed the vulnerability of its wireless networks in San Jose and Denver, some security analysts viewed the potential threat as significant and symptomatic of the airline industry's failure to properly address network security.

James Foster, a senior consultant and researcher at Guardent Inc., a security firm in Waltham, Mass., has conducted several wireless security audits during the past year that have uncovered significant vulnerabilities in and around major airport facilities, including John F. Kennedy International Airport in New York and Boston's Logan International Airport.

"Possible baggage system vulnerabilities do not surprise me," said Foster. "This is a serious problem that puts lives and the U.S. infrastructure at risk."

Although he wouldn't provide details about specific airlines, Foster's wireless security audits have shown that a skilled hacker with the right software tools would need only seconds to conduct a detailed reconnaissance of an airline's wireless network.

"Most of the time these [wireless systems] are tied to back-end systems," Foster said. Regardless of how arcane or proprietary those networks may be, "it's only a matter of time until somebody figures out how it works, how it communicates and how people authenticate," he said. "It would take no more than an hour to figure out how the system worked."

Beyond Wireless: Tapping Other Tech

The Massachusetts Port Authority (Massport) has started to beef up security at Boston's Logan International Airport – the departure point for two of the planes hijacked on Sept. 11 – with facial-recognition technology and an automated document authentication system.

According to Barbara Platt, a spokeswoman for Boston-based Massport, the authority last month signed a contract with Imaging Automation Inc. in Bedford, N.H., to test that company's BorderGuard document authentication technology.

BorderGuard uses a scanner to verify that an identification document such as a passport hasn't been forged or altered. The system compares the scanned passenger ID against a database of Interpol document security information developed by Keesing Reference Systems BV in Amsterdam.

It also captures the contents of the document and cross-checks the information against a database of suspected criminals and terrorists. Platt said Massport intends to use BorderGuard to check IDs of passenger as well as airport workers, but declined to say where within the airport complex the agency plans to use the system.

Platt said Massport has also tapped two companies to provide facial-recognition technology to assist in passenger screening and to help positively identify Logan workers. She said Lau Technologies in Littleton, Mass., and Visionics Corp. in Jersey City, N.J., will provide Logan with the biometric systems for a pilot program. She declined to specify the number of systems ordered or where they would be used.

While several airports have installed or have announced plans to install facial-recognition systems, the problem is that there's no standard for how those systems should be deployed. Oakland police Sgt. Mark Schmid, who is in charge of the installation of a facial-scanning program at Oakland International Airport in California, said his and other agencies must agree on a standard format for storing the pictures before they can link to government agencies such as the FBI.

– Bob Brewin and Jennifer DiSabatino


THE ASSOCIATED PRESS

MASSPORT'S new security measures would aid the National Guard at Logan Airport with facial-recognition technology.

Quick Link **Find links on our site to the following topics surrounding the technology and issues involved in airline security:**
www.computerworld.com/q?a1480

- The Aviation and Transportation Security Act, text and PDF
- American Association of Airport Executives & Airports Council International - North America, airport security page
- Links to aviation security topics for the U.S. Department of Transportation
- SITA aviation security solution
- SITA: Implementing wireless networks at airports
- IEEE standards for 802.11b
- Cisco's response to criticism of wireless LANs by the University of Maryland and the University of California, Berkeley, with links to those universities' studies
- Wireless Ethernet Compatibility Alliance

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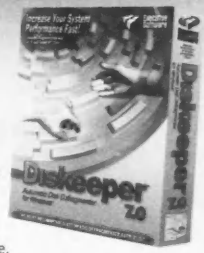
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AT DEADLINE

Judge Kills Microsoft Class-Action Deal

A federal judge in Baltimore rejected a controversial proposal to settle more than 100 class-action lawsuits related to Microsoft Corp.'s desktop software pricing. Judge J. Frederick Motz acted after Microsoft and attorneys representing two different groups of plaintiffs involved in the suits failed to come to final terms on the proposed settlement, which called for Microsoft to donate software, PCs and money to about 12,500 schools in the U.S.

CERT Gets Big Jump In Security Reports

IT security incidents reported to the CERT Coordination Center at Carnegie Mellon University in Pittsburgh more than doubled last year, compared with the total received in 2000. CERT said almost 53,000 security-related incidents were reported in 2001, up from about 22,000 the year before. Reports of software security holes also more than doubled to about 2,400.

IBM Sets Deferral Deal on IT Services

IBM extended financing incentives to its IT services for the first time, offering corporate users a 90-day payment deferral on contracts for business integration and technology services work. The deferral can be used with contracts financed by IBM and valued at $50,000 to $1 million, the company said.

Short Takes

London-based INVENSYS PLC's BAAN CO. software unit in Barneveld, Netherlands, added a Web-based sales management application to its customer relationship management product line. . . . MOTIENT CORP., a wireless data network operator in Reston, Va., filed for bankruptcy protection as part of a debt restructuring deal.

Tyson IT Staff Faces Meaty Integration Job

Acquisition results in complex project requiring 80-hour weeks to link systems

BY JAMES COPE

When chicken processor Tyson Foods Inc. bought meatpacking conglomerate IBP Inc. in September, it also acquired one of the most complex projects Tyson's IT department has ever faced: integrating the operations of the two companies.

The multimillion-dollar project reached an initial milestone this month when the first of 14 operating companies in IBP's Foodbrands America Inc. packaged meats subsidiary was tied into Tyson's systems.

Another unit will be integrated next month, and Gary Cooper, vice president of information systems at Springdale, Ark.-based Tyson, said his goal is to have all of Foodbrands' operations changed over by October.



TYSON'S Gary Cooper: Integration with IBP's Foodbrands requires untangling a "web of applications."

But Cooper said the integration effort has been fraught with challenges, requiring him and his lieutenants to put in 70- to 80-hour workweeks.

The project involves untangling "a web of applications and processes" used at Foodbrands' operations, he said. "I now own every AS/400 application known to mankind," Cooper added jokingly.

The project was further complicated by the fact that Dakota Dunes, S.D.-based IBP's annual revenue was more than double Tyson's.

The complexity forced Tyson to drop its original plan for a single project in which the integration would be done simultaneously with IT infrastructure upgrades at Foodbrands.

That initial plan was put in place in mid-2001, after Tyson executives were certain that the acquisition would occur. Eventually, though, Tyson decided that it needed to install the same networking technology and desktop software it was using at the Foodbrands units before doing the integration, said Kevin Young, director of technical services at Tyson.

The infrastructure changes include linking scores of Foodbrands sites to Tyson's data center over AT&T Corp. and WorldCom Inc. frame-relay circuits, updating PCs to Windows 2000 and converting from Lotus Notes e-mail systems to Microsoft Corp.'s Exchange at some locations. That should be largely completed by next month, according to Young.

But Cooper said it's taking more time and effort to shift the Foodbrands units from a dizzying array of homegrown and packaged human resources, accounting and product shipment applications to Tyson's systems, which are based on a combination of SAP AG's back-office software and proprietary production, delivery and billing applications.

In fact, Cooper described the integration work as the most difficult task he has encountered in his 17 years at Tyson. To help smooth the process, he said, his IT department has put application and data integration on a separate track from the infrastructure upgrades.

Cooper's plan calls for a rolling migration of the Foodbrands companies, with one or two units being done at a time.

Tyson's integration methodology starts with interviews of IT and business employees at each unit to create a detailed "fact base" of the existing applications and business processes, he said (see story at right).

During assessment and integration, the Tyson project teams try to involve IT workers at Foodbrands whenever possible, Cooper said. Foodbrands has about 15 IT staffers at its headquarters in Oklahoma City and from one to nine workers at each of the business units, he said.

Cooper declined to comment on whether there will be any consolidation of IT personnel after the integration project is completed. He also wouldn't disclose specifics on the project's expected cost.

What could be an even more daunting job may lie ahead: integrating IBP's fresh meat unit, which operates on a completely different business model than Tyson's. But Cooper deflected questions about that undertaking, saying he's focusing on Foodbrands for now. ◗

Gathering IT Ingredients

Details on Tyson Foods' project to integrate operations for Foodbrands' 14 packaged meat units into its systems architecture:

- ▸ Tyson gathered information to create "fact books" of 75 to 100 pages on each Foodbrands unit for use in developing integration plans and timelines.
- ▸ Tyson is upgrading the IT infrastructures at the operations to standardize their networks and desktop applications with what it uses.
- ▸ Back-office processing at Foodbrands is being shifted to Tyson's corporate IT systems, which are based on SAP R/3 and a set of proprietary applications.

Assess First, Integrate Later

The assessment teams responsible for probing deeply into the business operations at the affected IBP units are playing a key role in the ongoing IT integration project at Tyson Foods.

Workers on the assessment teams ask thousands of questions before any integration work gets scheduled, said Gary Cooper, vice president of information systems at Tyson. The goal is to document existing business processes so they can be handled by Tyson's systems, he explained.

For example, team members ask the units within IBP's Foodbrands America subsidiary for master lists of products and suppliers. Also on Tyson's must-see list is information on things such as leases, contracts, customer credit processes, sales procedures and human resources policies, according to Cooper.

The result of all the questioning is a fact book consisting of 75 to 100 pages for each IBP unit, he said. Tyson's project managers use them to create integration plans and set implementation schedules.

Cooper said the assessments began in the fall and are being done on a unit-by-unit basis, similar to the way the integration work is taking place.

– James Cope

Correction

A sentence that preceded a chart in Paul A. Strassmann's column "The 'Right' Spending" [Business Opinion, Jan. 7] on Ford and General Motors incorrectly described data on spending in the chart. The chart detailed what the companies spent in comparison to their revenues, not just what they spent on IT.



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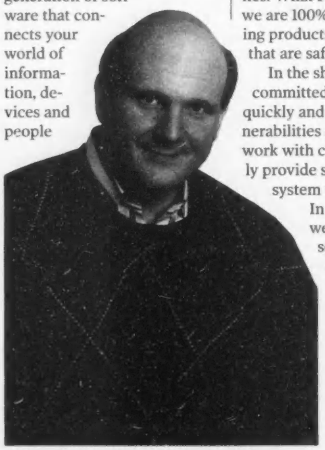
Ballmer: Future Is Web Services

Microsoft chief touts .Net, Yukon

Microsoft Corp. CEO **Steve Ballmer** this week offered a preview of the coming year for his company, with corporate IT managers in mind, via an e-mail interview with *Computerworld*'s Carol Sliwa. Excerpts follow:

Can you give us a synopsis of the movie trailer for coming attractions from Microsoft? From my perspective, the theme over the next year is Web services, XML and .Net. . . . In terms of Microsoft specifically, we'll be following up the launch last year of Windows XP, Office XP and Xbox with a number of key offerings, including Windows .Net Server, Visual Studio.Net and the Tablet PC, as well as updates to a number of our .Net servers.

Microsoft has used the term *.Net* in many ways. How do you now define *.Net*? I really think the best way to define *.Net* is as Microsoft's platform for XML Web services. It's the next generation of software that connects your world of information, devices and people in a unified, personalized way. What I mean by this is that the .Net platform enables the creation and use of XML-based applications, processes and Web sites as services. These services can then share and combine information and functionality with each other.



MICROSOFT'S STEVE BALLMER: "The theme over the next year is Web services, XML and .Net."

A year ago, you said Yukon would be key to your "next-generation storage, database, file system, e-mail and user interface work." How much progress has Microsoft made? The development of Yukon, the next major release of Microsoft SQL Server, is on track, and we expect the first beta to ship this year.

Microsoft software continues to be plagued by well-publicized security problems. How will you convince corporations that your platform is ready for major new initiatives such as .Net? This is obviously a challenge not only for Microsoft but for our entire industry. The fact is, all software contains vulnerabilities. What I can tell you is that we are 100% focused on building products and technologies that are safe and secure.

In the short term, we are committed to responding quickly and openly when vulnerabilities are discovered and work with customers to rapidly provide solutions to ensure system security.

In the long term, we're building secure software from the ground up through programs such as the Secure Windows Initiative, which is focused on providing Microsoft engineers with ongoing education, better tools, security-focused development processes and rigorous internal and external testing required to deliver the high-quality, secure software and services that customers demand.

The changes Microsoft made to its volume licensing and upgrade programs had corporate users up in arms last year. What do you say to those corporate customers? One of the big issues for many customers was that this is [a] big change in how we handle upgrades and we didn't give them enough time to plan for the change. But we listened and extended the transition to the new program into the middle of next year, so folks have 14 months from the original announcement to review Software Assurance and plan accordingly.

How do you foresee the competitive landscape changing for Microsoft this year? How will you counter the challenge that Linux and Java present going forward? In the current economic climate especially, customers are demanding bottom-line value for their IT investments. We intend to deliver by offering not only value but also a clear technology road map for the future. I really believe that the companies that fail to deliver on these business basics will be paddling upstream. As for Linux, the overall [total cost of ownership] issues with Linux, coupled with its limitations, have caused many enterprise organizations to look elsewhere in their planning for the coming year. . . .

For Java, a big question remains around strategic innovation for Web services. With the .Net framework, Microsoft has developed a clear, well-articulated path designed from the ground up specifically for Web service development and deployment. ◗

Microsoft Investigates Alleged Flaw in Browser

Experts say standard security rule ignored

BY JAIKUMAR VIJAYAN

Microsoft Corp. is investigating an alleged flaw in recent versions of its Internet Explorer (IE) browser software that could allow attackers to spoof legitimate Web sites, steal content from browser cookies and gain access to certain types of files on a victim's system.

The alleged flaw, which affects IE Versions 5.5 to 6, was first reported to the company on Dec. 19 by an independent security researcher who refers to himself as ThePull.

The vulnerability is the result of Microsoft's failure to abide by an industry-standard browser security rule known as the same-origin policy, said David Ahmad, moderator of Bugtraq, a mailing list on which ThePull first posted details of the alleged flaw.

The same-origin policy was established to prevent malicious Web sites from interacting with and stealing sensitive information left in cookies set by other sites on a user's computer. In other words, when one Web site is used to open another Web site in a separate pop-up window, script code from the first site shouldn't be able to affect the information or properties of the other site.

In an e-mail sent to *Computerworld* Jan. 8, a spokesman for Microsoft's Security Response Center said the company is investigating the issue "just as we do with every report we receive of security vulnerabilities affecting Microsoft products."

"At this point in the investigation, we feel that speculating on the issue while the investigation is in progress would be irresponsible and counterproductive to our goal of protecting our customers' information," the spokesman wrote.

Even so, said Ahmad, Microsoft's failure to abide by the industry standard in recent IE versions has resulted in severe security vulnerabilities.

"If you use the document.write method in the correct manner as stated by Microsoft's own documentation, you are able to spoof sites, read cookies from other sites and read local files on a user's system," ThePull wrote in an e-mail to *Computerworld*. "This means that someone could send you an e-mail from security@microsoft.com to download an important update with a link — upon clicking that link, you could be brought to a Web page with a Trojan [horse] on it."

Because of the flaw, attackers could potentially construct Web sites that steal cookies, perform actions on different sites through script code and transmit the content of text files to attacker-controlled Web servers, warned an advisory by San Mateo, Calif.-based SecurityFocus.com.

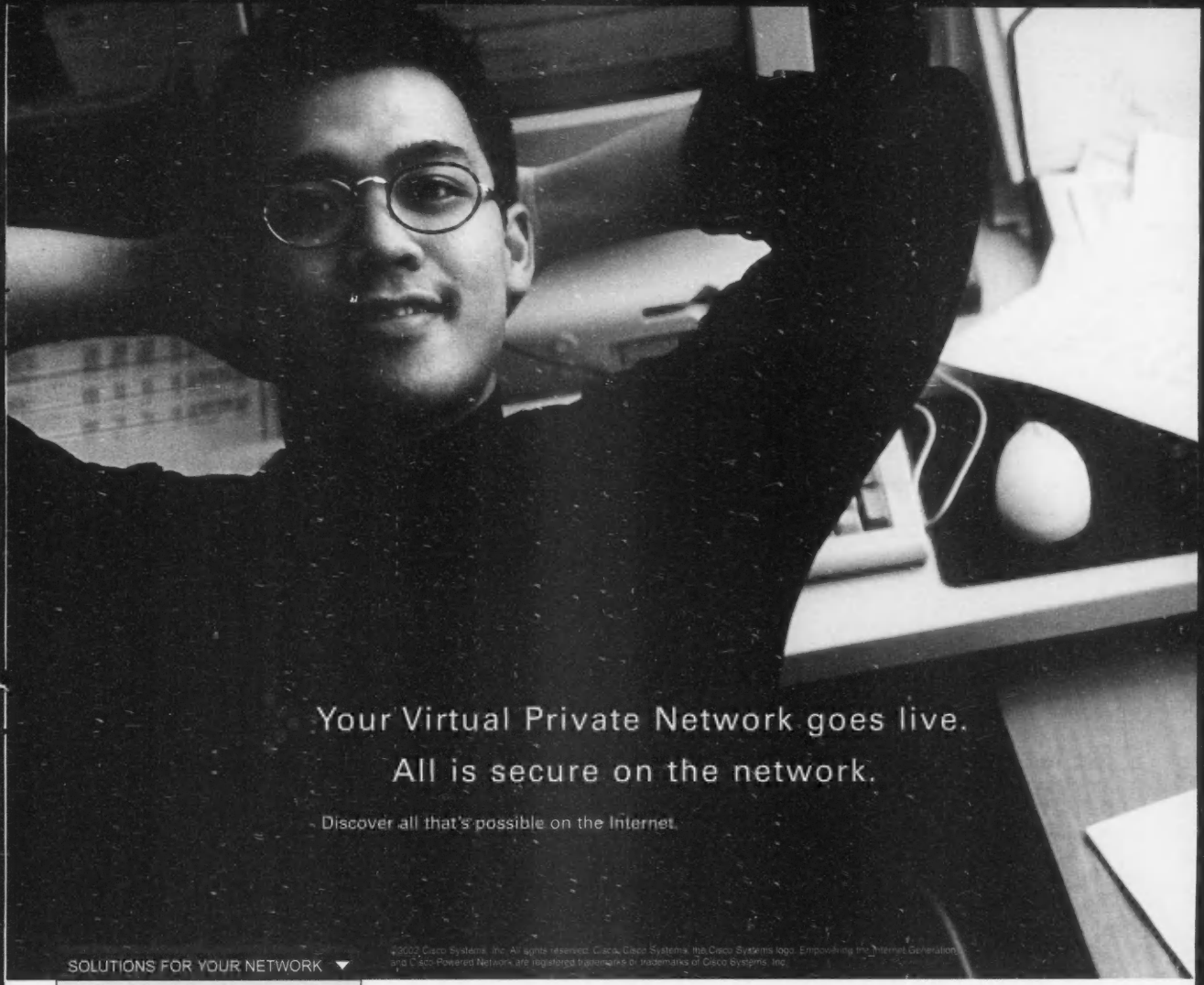
Perhaps the most serious consequence is that trusted Web sites can be replaced with "attacker-created HTML," the advisory said. The best way for users to handle the problem is to turn off JavaScript, said ThePull.

Meanwhile, security firms last week reported the first virus directed at Microsoft's .Net platform. Called W32.Donut, the virus isn't likely to be a major threat because of the small installed base of .Net users, according to an advisory by Sunnyvale, Calif.-based McAfee.com Corp. ◗

Potential Trouble

The IE vulnerability being investigated by Microsoft potentially lets attackers:

- **Spoof** Web sites.
- **Steal** sensitive data from browser cookies.
- **Access** and steal certain types of files from a victim's system.



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BRIEFS

Auto Parts Maker Names First CIO

Southfield, Mich.-based Federal-Mogul Corp. named Michael Gaynor to serve as its first CIO, effective Feb. 11. His top priority will be to oversee the integration of Federal-Mogul's IT architecture with the systems at 13 companies that the $6 billion auto parts maker has bought since 1998. Gaynor worked most recently as CIO at Avery Dennison Corp. in Pasadena, Calif.

Gulfstream IT Outsourced to CSC

Gulfstream Aerospace Corp., a Savannah, Ga.-based aircraft maker, announced a 10-year IT outsourcing deal under which Computer Sciences Corp. (CSC) will manage its computer operations and applications development. About 220 IT workers were transferred from Gulfstream to El Segundo, Calif.-based CSC when the $510 million deal took effect late last month.

Microsoft Loses Legal Bid, Tries Another

Microsoft Corp. asked the federal judge overseeing the antitrust case against the company to vacate a previous order requiring that depositions be open to the public. The request came two days after Judge Colleen Kollar-Kotelly rejected a motion by Microsoft to delay the scheduled March 4 start of hearings on possible behavioral remedies that could restrict its business practices.

Short Takes

German airline LUFTHANSA AG signed a $40 million deal with Belgium-based SOCIETE INTERNATIONALE DE TELECOMMUNICATIONS AERONAUTIQUES SC for development of an IP-based intranet. . . . EASTMAN KODAK CO. in Rochester, N.Y., is spinning off a new company to develop wireless video and data transmission technology.

Office Building Managers Eye IT-Based Access Control Tools

Biometric systems and other technologies could provide post-Sept. 11 'self-insurance'

BY DAN VERTON

FACILITY MANAGERS at one of the tallest office buildings in the U.S. are studying the feasibility of deploying dozens of networked kiosks to handle biometric authentication operations for the thousands of workers and visitors who walk through the doors every day.

The study at the building, which can't be identified for security reasons, is part of a growing trend by many companies to provide what some insurance experts describe as an IT-security-based self-insurance model. Not only have property insurance rates for companies skyrocketed by more than 50% in some cases since the Sept. 11 terrorist attacks, but many insurance providers are also excluding terrorist incidents from their future policies and jacking up deductibles for large corporate facilities, many of which are underinsured.

As a result, some companies are eyeing IT-based security approaches as low-cost forms of "self-insurance," said Bill Pieroni, general manager of global insurance at IBM. Their options include biometric systems for tracking visitors and authorized employees, smart cards, and networked sensors that can detect bombs, chemicals or nuclear devices.

The Only Terrorism Insurance

"You could make the argument that things like biometric devices are a very cheap form of premium," Pieroni said. "It's probably the only form of insurance [against a terrorist attack] available to companies."

However, IT security and monitoring systems would probably not have a significant impact on the overall property insurance rates that building owners have to pay, said Pieroni. "The primary impact would be to help draw tenants by making them feel secure," he said. "In terms of [rates for] durable structures, it's not going to help."

Prior to the Sept. 11 attacks, property insurance rates, including business interruption coverage, were already on the upswing, according to experts. In Tennessee and Kentucky, for example, increases of 20% weren't uncommon in 2000 and 2001, and companies with "severe" exposure risk saw increases of more than 50%, according to a recent study by Itasca, Ill.-based Arthur J. Gallagher & Co., the fourth-largest insurance broker in the world.

"Sept. 11 simply hardened the resolve of the underwriters to increase the rates," said Patrick McDonough, a lawyer and corporate risk expert at Howrey Simon Arnold & White LLP's Insurance Recovery Group in Washington. "Companies need to find ways of identifying stealth attacks at the entry points" of their facilities, such as lobbies and parking garages, he said.

John Ellingson, CEO of Akron, Pa.-based Edentification Inc., said the private sector urgently needs a Web-enabled biometric clearinghouse to enable facility managers of large office buildings to identify authorized tenants, grant one-time, controlled access rights to walk-in visitors and weed out individuals who attempt to gain entry using fraudulent identities.

"We used to build a wall around an asset. Now you have to build a wall around an individual," said Ellingson.

However, more than a single IT system, even a biometric one, will be needed to affect soaring rates, according to Manfred Ohrenstein, a Manhattan-based insurance lawyer whose firm, Ohrenstein & Brown LLP, was a tenant at the World Trade Center.

"If a building has adequate biochemical testing processes and could detect a biological agent being introduced in the building," he said, "that lessens the risk of that kind of attack, and that lessened risk would be reflected in the premium."

AT A GLANCE

Insurance Outlook

- Pricing will likely **rise** significantly, by as much as 15% to 30% or higher.
- Reinsurers will **exclude** terrorism losses from their 2002 policy renewals.
- Carriers will **demand** loss control commitments from clients.
- Deductibles will **increase**, possibly to $5,000 to $10,000.
- Applications will **require** far greater detail as to the ownership, operations and exposures of a risk.

SOURCE: "THE INSURANCE INDUSTRY AFTER 9/11," A STUDY BY ARTHUR J. GALLAGHER & CO., ITASCA, ILL.

Identity Management Key to Physical Security, Vendor Says

John Ellingson, CEO of Edentification, has offered his company's biometric engineering design free of charge to any business consortium that is willing to tackle what he calls an urgent need to beef up security at large U.S. office complexes.

According to Ellingson, commercial building security managers need a centralized source for biometric data verification to help identify unauthorized individuals on their premises and control entry to all or parts of a building.

Last year, 28,000 branch bank offices used Edentification's software to screen 12 million new bank account applicants for identity fraud. The screenings revealed that 750,000 of the identities used to open those accounts had been intentionally manipulated for the purposes of deception, Ellingson said.

"Those same identities were used to obtain driver's licenses, credit cards and airline tickets," he said.

Banks and other financial institutions have licensed Edentification's technology to screen more than 50 million identities since 1996. The company's software sorts through large consumer databases and uses a proprietary fuzzy logic key to analyze and score identity information individuals entered against the database. Multiple databases can be used to track identities for potential fraud, including consumer databases and the FBI's Most Wanted list, said Ellingson.

However, the strength of the technology is in its ability to enroll and screen strangers as they enter a building, he said. Biometric readers would enable security personnel to give individuals access to a building for specified lengths of time. They would send alerts when a person exceeded his authorized stay and even weed out individuals using fraudulent identities before they entered a building.

Mike Hager, vice president of network security and disaster recovery at OppenheimerFunds Distributor Inc. in New York, likened the Edentification technology to the concept of a revocation checklist in the X.509 messaging world. "It sounds really interesting, if they can get sufficient participation to make the searches valid," he said.

However, John Pescatore, an analyst at Gartner Inc. in Stamford, Conn., downplayed the viability of using biometrics to monitor public entry of large corporate facilities.

"Biometrics is overkill, way too expensive and way too intrusive for applications like random public entry," he said. "It makes no sense."

– *Dan Verton*

As a product developer at JVC, I was asked to create a hybrid VCR that would revolutionize the way people watch TV programs. The challenge was to make it no bigger than a standard VHS recorder and get it to market within a year. Did I reach my goal? You bet.



JVC wanted to create a VCR like none other. One that combines the multifunctions of a hard disk drive with the familiarity of a VCR. So TV programs can be recorded and played back simultaneously. Size, of course, was a factor. So was time. That's why JVC chose Fujitsu's high-performance, highly integrated semiconductor solution, which provided all the necessary circuits on a single 28mm chip. With the technology and expertise provided by Fujitsu, JVC successfully developed a finished product within one year. Now even more people are tuning in to JVC. For more details, visit us.fujitsu.com/casestudy/. With a partner on the cutting edge of technology, you can accomplish anything.

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Distributor: New Apps Helped Seal $3B Deal

Aviall IT rebounds from mainframe migration problems

BY MARC L. SONGINI

AVIALL INC. is pointing to a $3 billion spare-parts distribution contract it won last month as proof that its new IT infrastructure is starting to pay off after a previous mainframe migration project nearly caused disaster three years ago.

The 10-year contract, under which Dallas-based Aviall will sell and distribute spare parts for a widely used aircraft engine from Rolls-Royce PLC, took effect on Jan. 2. Aviall CIO Joe Lacik last week said the deal — the largest of its kind in the firm's history — would have been impossible without the systems that his staff largely finished putting in place during the fall.

Aviall and London-based Rolls-Royce already had a separate, much smaller distribution deal in place. But one of the keys to the new contract, Lacik said, was Aviall's improved ability to offer technology-driven services such as sales analysis and demand forecasting down to the line-item level to manufacturers.

Lacik said Aviall spent $30 million to $40 million to install new enterprise resource planning (ERP), supply chain, customer relationship management and e-business applications from five software vendors, including St. Paul, Minn.-based Lawson Software Inc. and San Mateo, Calif.-based Siebel Systems Inc.

The distributor of aviation and marine products also deployed application integration software from Sybase Inc., in Emeryville, Calif., to tie the systems together (see box). Most of the pieces are in place, except for Siebel's order entry software and some of the integration links, Lacik said. Those are scheduled to be rolled out later this year, he added.

The IT makeover, which began two years ago, was a gamble for Aviall following a near-disastrous migration from its mainframe systems to a highly customized set of Lawson ERP applications, completed in early 1999.

Training, software and implementation issues related to that project were blamed for a big drop in sales. Extensive manual work-arounds were required, and the company's CEO eventually left. Lacik came in to run IT at the start of 2000.

The applications from Lawson were perfectly sound but hadn't been designed to handle the huge amount of tracking numbers that Aviall needed to maintain on the parts it sells, Lacik said. The company unplugged much of the Lawson system and continued to use pieces of its mainframe applications while developing the new multivendor architecture.

According to Lacik, the distribution and supply chain services made possible by the new applications have helped Aviall minimize lost sales despite the down economy and the Sept. 11 terrorist attacks. He said the systems have also cut costs to the point where the architecture has probably already paid for itself, although Aviall has yet to calculate its return on investment.

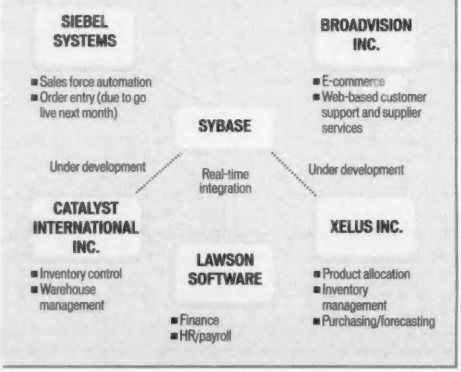
"No question that there has been a complete turnaround from the company that was potentially for sale a few years ago and losing market share," said Peter Arment, an analyst at JSA Research Inc., a Newport, R.I.-based aerospace research firm.

Arment said it's difficult to say exactly how much credit IT deserves. But the system changes have made the company more efficient and contributed to an improvement in its profit margins, he added.

Quick Link IT shops at Aviall and Rolls-Royce will need tight ties. Read more on our Web site: www.computerworld.com/q?26335

Application Diversity

Aviall's new IT architecture uses middleware technology to tie together a broad set of applications from various vendors.



Analysts Say Retailers Will Keep Up IT Spending in '02

Sales slump spawns interest in efficiency

BY CAROL SLIWA

Retailers doing the best job at weathering the economic storm — which resulted in the weakest holiday sales growth in six years — are expected to make the most substantial investments in efficiency-oriented IT systems during the coming year, industry analysts said last week.

Cap Gemini Ernst & Young's retail and consumer division is seeing "an explosion in retail-related IT spending" in North America, said Fred Crawford, an executive vice president at the Paris-based consulting firm. Cap Gemini arranged a teleconference call last week to discuss retail trends.

Most spending is on warehouse and inventory management and financial controls, Crawford said. Surprisingly, the retail industry isn't investing in customer relationship management (CRM) to the same degree as "every other industry segment, including consumer packaged goods," he said, noting that his firm did much more retail CRM work two years ago.

Any investments that retailers make will come despite declining sales growth figures in the industry, as predicted during last week's teleconference by prominent retail analysts.

Sales in chain stores grew just 2.2% during November and December, making the 2001 holiday season the weakest since 1995, said Michael Niemira, an economist at Bank of Tokyo-Mitsubishi Ltd. in New York.

Online Spike

Meanwhile, the online sector saw a spike of about 20%, with $13 billion to $14 billion in holiday sales, said Ken Cassar, a senior analyst at New York-based Jupiter Media Metrix Inc. But "the 20% or so that we're looking at this year is less sunny," considering that growth had been 124% in 1999 and 56% in 2000, he said. Jupiter won't finalize its 2001 holiday numbers for another three to four weeks, Cassar said.

Spending already had been slumping during the 2000 holiday season, when overall retail sales growth for the months of November and December was 2.4%, Niemira said. He added that retailers were feeling recessionary forces well before the government made the official declaration in March.

But Niemira expects the picture to gradually brighten. He predicted that sales growth for the year as a whole will reach 3% to 3.5%, compared with 2.6% in 2001. "It's not going to feel good to every retailer, but it'll feel better than 2001," Niemira predicted.

Those retailers that elect to invest in their e-commerce sites will be "buttoning down core functionality," focusing on merchandising and improving their search engines and general navigation features, according to Cassar.

"There may be some opportunity in merchandising applications, particularly on the analytics side, helping us understand the types of things that people buy, finding cross-selling and potentially upselling potential," Cassar said.

He predicted that sites will also look to speed page downloads, which can take 11 to 15 seconds on an average dial-up modem. "That's not going to be acceptable going forward, and I wouldn't expect the mass market's going to have broadband soon," Cassar said.



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BRIEFS

Compaq to Report Q4 Profit, not Loss

Compaq Computer Corp. reversed an earlier prediction that it would report a loss for the fourth quarter of 2001, saying it will show a profit because of higher-than-expected sales. Fourth-quarter revenue should top the $8 billion mark, up from Compaq's earlier projection of about $7.8 billion. The anticipated profit follows losses in the second and third quarters of last year.

Vendors See Mixed Results for Quarter

Software vendors SAP AG and Houston-based BMC Software Inc. both also announced that their results for the just-finished quarter should be better than expected. But San Diego-based Gateway Inc. said its PC shipments were below expectations. And Basking Ridge, N.J.-based networking vendor Avaya Inc. warned that it will report a loss on lower-than-expected revenue.

IBM Outsources NetVista Production

IBM signed a deal to outsource manufacturing of its NetVista desktop PCs to Sanmina-SCI Corp. in San Jose, which is buying production operations in the U.S. and Europe from IBM as part of the agreement. IBM said the outsourcing move won't affect its NetVista pricing. The company will continue to design the NetVista line and manufacture its ThinkPad notebook PCs.

Short Takes

Boston-based OPEN RATINGS INC. bought the technology assets of GENTIA SOFTWARE PLC, a British developer of applications for measuring corporate performance. . . . Mountain View, Calif.-based VERISIGN INC. announced plans to buy two companies, including wireless billing services provider H.O. SYSTEMS INC. in Savannah, Ga.

New Lucent CEO to Keep Strategy Intact

Former executive at telecommunications equipment vendor returns at the top

BY JAMES COPE

AFTER A 15-MONTH search for a new CEO, Lucent Technologies Inc. last week brought back a former high-level executive who isn't expected to make major strategic changes at the struggling company.

Lucent gave the CEO job to Patricia Russo, who left the Murray Hill, N.J.-based vendor of telecommunications equipment 18 months ago and most recently was president and chief operating officer at Eastman Kodak Co. in Rochester, N.Y. Russo, 49, takes over at Lucent from Henry Schacht, who had been running the company on an interim basis since late 2000.

But Schacht will continue as chairman for up to a year, and Russo indicated that she plans to stick with the strategy he devised. In a statement, Russo said Schacht and his management team "have put in place and are implementing a solid, credible plan for turning this business around."

A 19-Year Veteran

Russo is no stranger to Lucent, having worked at the company and its forerunner operations within AT&T Corp. for 19 years before leaving in August 2000. Her last job before she departed was heading up the Lucent unit that makes equipment for telecommunications and data network services providers — the business that became the company's core operation as part of the overhaul started by Schacht.



RUSSO: Lucent has a "solid, credible plan" in place.

"In some respects, she may see this as vindication for being prematurely forced to leave Lucent in the first place," said Jim Slaby, an analyst at Giga Information Group Inc. in Cambridge, Mass.

The Lucent that Russo is returning to is far different from the one she left, following a series of cutbacks and restructuring moves that were prompted by big losses and a sharp drop-off in sales.

Lucent is now focused almost solely on selling to service providers, Slaby said. The company's line of enterprise switches and hubs was spun off into Basking Ridge, N.J.-based Avaya Inc. two years ago, and various other units have also been divested since then.

Janet Davidson, president of integrated network solutions at Lucent, said the company still offers network services and systems to corporate users through service providers and other partners. For example, she said, Lucent worked with WorldCom Inc. to provide a virtual private network linking more than 1,000 locations to Toyota Motor Sales U.S.A. Inc. in Torrance, Calif.

Lucent also continues to sell directly to IT departments in vertical markets such as finance and health care. But corporate users "will have a hard time getting much attention from Lucent," Slaby said.

Analysts: USi Filing May Harm ASP Image

Chapter 11 sought as part of restructuring

BY JAIKUMAR VIJAYAN

Last week's bankruptcy filing by USinternetworking Inc. (USi), the largest application service provider (ASP) in the U.S., is sure to further erode the confidence that corporate users have about relying on hosting firms, analysts said.

But, they added, it would be wrong to view USi's woes — and those of some other major ASPs — as a sign that there's something inherently wrong with the application outsourcing model on a long-term basis.

Annapolis, Md.-based USi filed for Chapter 11 bankruptcy protection as part of a planned restructuring that's aimed at reducing the company's $120 million debt and providing it with new funding. Under the creditor-approved plan, an affiliate of Boston-based Bain Capital Partners LLC will invest up to $106 million in USi, allowing the ASP to eliminate most of its debt.

USi, which cut its workforce by more than 50% last year, signed an initial agreement with Bain in October and said the deal has now been finalized. "It's unfortunate that the only way we could get this accomplished was through a Chapter 11 filing," said USi CEO Andrew Stern. "But ... this is by no means a going-out-of-business announcement. This is very much a staying-in-business announcement."

Even so, USi's plight is sure to cause tremors in an industry that has seen a string of business failures during the past 12 months, said Amy Mizoras, an analyst at Framingham, Mass.-based IDC. "I think the overall reaction to this is going to be negative," said Mizoras.

But Mizoras added that she expects the appeal of ASP services to continue to catch on with users. Most of the troubles plaguing USi and other ASP pioneers have to do with issues such as overinvestment in technology infrastructures and application service portfolios, she said. For example, USi spent hundreds of millions of dollars building data centers for customers that have yet to materialize.

The licensing, technology and service issues involved in retrofitting packaged application for delivery via the Internet also presented big challenges for many ASPs, said Laurie McCabe, an analyst at Boston-based Summit Strategies Inc.

"A lot of them got carried away by their own and everybody else's hype," McCabe said. Going forward, she predicted, most ASPs will likely be a lot leaner and focus on one or two vertical markets or application niches instead of trying to support a wide range of applications.

McCabe added that she also expects more ASPs to concentrate on offering internally developed applications rather than relying on packaged software made by other vendors.

Financial Fix

USi's plan for restructuring its finances includes the following elements:

- The company finalized a deal to get up to **$106 million** in new financing from an affiliate of **Bain Capital Partners.**
- Bain will invest **$81 million in USi** at first. It will follow up with the remaining $25 million if specific business milestones are met.
- To speed up the process, **USi filed for bankruptcy protection.** It expects to emerge from Chapter 11 in the spring.

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1-866-2REDHAT #8

MARYFRAN JOHNSON

Windows Homeland

SO HERE WE ARE on Jan. 14, 2010. Hard to believe it has been only eight years since Bill Gates changed everything with that historic announcement at the Consumer Electronics Show in Las Vegas, when he proclaimed Windows XP the "digital hub" for the home.

How time flies when you're constantly rebooting your house!



MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at **maryfran_johnson@computerworld.com**.

Not that I'm complaining. I have to stay on the cutting edge of technology, so I signed right up, along with the original 434,565 beta users of Mira.

You remember Mira, that original set of wireless technologies that let you unplug flat-panel displays and schlep them around? Just like Bill promised us all those years ago: "As you move from device to device, your information is there for you."

Once we solved that problem with our dachshunds burying the damn things in the back yard, we were actually able to find our information. That was cool.

We eventually had to scale those dogs up to Dobermans anyway, after a few robbery incidents following some Unrecoverable Door Unlocking Errors in Windows HomeSecure.

My family was also an early adopter of Freestyle, which as you may recall turned the Windows XP interface into a control panel that could be operated by remote control. Looking back now, I can see why those roving vans of wireless crackers dubbed it FreeForAll.

But when the Gates administration started that new federal agency (The Bureau of Stolen Identities, Compromised Information and General Aggravation), at least we had someone to call.

Not that you can actually talk to human beings anymore. But seriously, who needs them now that we have nationwide installation of Microsoft's voice-recognition software, Windows SayAgain? Though I do find Steve Ballmer's voice just a tad screechy.

What changed our lives the most, I must say, was the introduction of Windows technologies into all of our appliances. I've had very reasonable service from the Microsoft Certified Plumbing Engineers when WindowsJohn gets clogged.

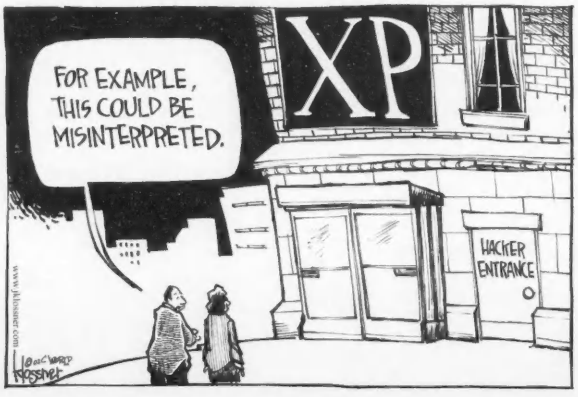
Of course, when Bill said he'd "deliver the intelligent experience," he probably wasn't thinking of my teenage daughter's smart-aleck friends hacking into our Windows GroceryList and ordering that truckload of Doritos and Mountain Dew.

And my husband is still a little freaked about the lawn mower ordering that herd of goats to help with lawn maintenance. Don't even get him started on how the car insists on only premium MicrosoftGas instead of regular.

I still say it was merely an unfortunate choice of words on Bill's part when he told a Reuters reporter how "the explosive way that these devices work together will overwhelmingly be wireless."

There's no way he could have known about that freakish data exchange glitch between the MicrosoftToaster setup utility and the Stinger SmartPhone 2002. Didn't they get a patch out within 90 days? I mean, give the guy a break.

Overall, I can't say enough good things about Windows as the hub of my digital home. Life is so filled with unexpected challenges these days. I can hardly wait to sign up for that next big release. I hear it's code-named Lucifer.



PIMM FOX

IT's Triumph In Euroland

ROME, ITALY

THE FRENCH SAY "your-roe," the Germans "oi-roh" and the Italians, well, they stretch it out to "eh-or-roh." Despite the linguistic differences among the 12 member countries of the European Union that have opted to ditch their national currencies in favor of the euro, it's surprising how little fuss and bother accompanied the EU's brand-new, state-of-the-art money.



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Shops and ATMs are plentifully stocked with the rather bland-looking coins and notes, while most consumers seem happy to patiently work through this experiment in economic togetherness.

Underlying the dramatic shift across the European continent is a great appreciation for IT and the role it has played in making the gradual transition smooth and free of anxiety. Banks, post offices (stamps are quoted in both national currencies and euros for the time being) and most retail establishments have converted their inventory, accounting and payment systems to euros, making this final move into consumers' pocketbooks an inconvenience rather than something to obsess about. A few notable glitches occurred, of course, but most people here seem to be making the shift to new money rather effortlessly.

The euro's success on the street proves how much faith people have in the IT infrastructure that keeps their everyday lives humming. Mario Di Desidero, a lawyer from Lanciano, a small town in eastern Italy, explains that people are conditioned to seeing euro conversions on bank and credit card statements, so the appearance of euro currency seems natural.

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IT operations have run so well during the conversion — which lasts until the end of February, when only the euro will be accepted — that people have displayed a complacency that would surprise most IT managers with memories of pre-Y2k panic. In Rome, shopkeeper Umberto Dell'Omo at the Piazza Alessandria cheerfully quotes prices of oranges and lettuce in lira and euros. In Paris, it's chic to pay in euros and retro to handle francs.

On second thought, maybe it was the public's memory of IT's nearly effortless handling of Y2k that has made it so calm.

The Europeans have done us a favor, reawakening our faith and hope in IT's capabilities. At the very least, it offers a good reason to install new keyboards with the euro symbol. But if you're concerned about high-tech crackers using their prowess to exploit the transition, consider this: In Sardinia, thieves used a backhoe to haul away an entire ATM stuffed with €10,000. How old-fashioned. ▶

DAVID MOSCHELLA

Web Services Won't Match The Hype

EVER SINCE the dot-com bubble burst, it's been tough in the buzzword business. Remember *bricks and mortar, disintermediation, bits vs. atoms, first-mover advantage, increasing returns, critical mass* and, of course, *New Economy*? You don't hear too many of those terms these days.

But the buzzword factory hasn't shut down. During the past six months, it's been running at about half capacity trying to promote Web services as the IT industry's Next Big Thing. With a steady flow of seminars, white papers and supportive punditry — much of it financed by giants such as IBM, Sun, Microsoft and Oracle — it's reminiscent of the good old days. But given the sad fates of so many previously hot new concepts, what exactly are we to make of this one?

Web services enthusiasts might have an easier job if they had chosen a different name. During the Internet boom, *Web services* was basically synonymous with dot-com companies, virtually all of which were providing various Web-based services. *Web services* was also the umbrella term for many specific technology services such as Internet access, Web hosting, Internet storage and faxing.

In addition, the term is still used to encompass wider industry trends such as the replacement of packaged software with Web services and the emergence of the Web as an electrical-grid-like service utility.



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Amazingly, the current usage breaks new ground once again. According to IBM, Web services are "self-contained modular applications that can be described, published, located and invoked over a network, generally the World Wide Web." In other words, Web services are now defined as interoperable service components that can be accessed as necessary.

Frequently cited examples include third-party services for instant messaging, auctions, electronic payments and online purchasing systems. Existing credit card authorization and content-syndication systems also fall within the Web services realm.

It all sounds reasonable enough, but recent experience is on the side of the skeptics. It's somewhat deflating to realize how much time and energy have been wasted talking about interoperable software objects.

Consider the fierce but not particularly consequential debates over DCOM, CORBA, JavaBeans, ActiveX, object-oriented databases and the like. It's easy to see the current incarnation of Web services and its various components, including XML, SOAP and UDDI, as belonging to this less-than-glorious part of IT history.

If anything, the Web services challenges of today are even tougher than those faced by previous interoperability initiatives. Whereas earlier efforts focused largely on improving interoperability within a single organization, Web services vendors promise that both intra- and interenterprise integration will eventually be as easy as HTML and HTTP interoperability are today. But the difficulties in quickly achieving this goal are hard to overestimate.

My take on Web services is that it's not so much the industry's Next Big Thing as a sign of where the Web is headed. Interoperable components won't create a big, new market full of exciting new companies, and they won't create a dramatic shift in applications or capabilities.

The Web has always been about services, so in this sense, Web services will thrive. But all of our experience suggests that the emergence of truly interoperable Web components will eventually prove important. And progress will be much slower than today's heavy promotional campaigns suggest. ▶

READERS' LETTERS

Good Business or Greed?

IF AT&T and Comcast don't manage their business fairly, they could end up like Excite ["Users: AT&T Comcast Should Change Policies," News, Jan. 1]. In the article, user Eric Hoyt drew a sarcastic analogy that backfires. He said that charging for VPN service "is like charging you more for gasoline depending on what kind of car you drive." Will your gasoline bill not be more if you drive a Chevy Suburban than if you drive a Civic? If you don't like the cable service, then try to get DSL, and if you're still not satisfied, go back to dial tone. Let the cable companies manage effectively and prevent another Excite-type bankruptcy.

Matt Cero
President
Computer Tutor
Seattle

THE GREED demonstrated by these policies is incredible. Our small company is setting up a VPN. Although its primary use will be for road warriors dialing into a local ISP to access our file server and e-mail, some people will occasionally use the VPN from home. There is no way any of them will pay an extra $60 a month just to access our LAN through a VPN. Both the cable and phone companies see money anytime the term *business user* is mentioned. But they could make more money by pricing the services competitively and making up in volume what they try to make by overpricing "business-level" access.

Don Yelton
Senior staff
Labblee Corp.
Cambridge, Mass.

UCITA's Weasel Backers

IN "COMING Retractions" [The Back Page, Jan. 7], Frank Hayes wrote, "Writing about backers of UCITA . . . I'll almost certainly refer to the UCITA proponents . . . as self-destructive weasels who would kill their customers as gladly as they would eat their young. This will be inappropriate. Weasels don't actually eat their young."

I believe that "This will be inappropriate" should read, "This will be inaccurate." Appropriateness is a subjective opinion. That weasels don't actually eat their young is a fact. I, for one, think that referring to the UCITA proponents as self-destructive weasels who would kill their customers as gladly as they would eat their young is appropriate.

James A. Wernecke
IT manager
Barrington, Ill.

BSA Is No Watchdog

I'M NOT SURE applying the term *software watchdog group* to the BSA is accurate ["BSA Offers One-month Grace Period to Software Pirates," *Computerworld.com*, Jan. 4]. The BSA is a consortium formed by vendors to promote their interests. Its stated mission is to "help governments and consumers understand how software strengthens the economy, worker productivity and global development; and how its further expansion hinges on the successful fight against software piracy and Internet theft."

Although few could argue against the need to prevent software piracy, it should be recognized that violations represent lost revenue to BSA members. While grace periods to promote the regaining of licensing compliance are appreciated from the consumer side, it should also be a warning to consumers concerning an underlying desire among BSA members to continue to look for new ways of increasing their incomes.

Bruce C. Barnes
President
Bold Vision LLC
Dublin, Ohio

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THIS WEEK

PINK SLIP SUBSTITUTE

Your company has huge investments in the training, experience and intellectual capital of its IT staffers — so cutting some of them loose during an economic downturn could turn out to be penny-wise and pound-foolish. Here are some firms' alternative approaches to layoffs. **PAGE 24**

RETURN ON TRAINING

Though some firms are cutting IT spending, most organizations are increasing their IT training budgets. Find out why many groups are emphasizing soft business skills, project management and security education. **PAGE 30**

WATCHING THE DETECTIVES



ERIC MILLETTE

Because a growing amount of crime evidence is digital, IT forensics experts such as PayPal Inc.'s Ken Miller (above) are an emerging group of high-tech professionals who not only solve crimes, but also help contribute to the bottom line. **PAGE 32**

CAREER ADVISER

Fran Quittel offers suggestions to an IT professional about the tax implications of becoming an independent consultant. She also explains the differences between exempt and nonexempt status to a Unix administrator. **PAGE 34**

JOE AUER/DRIVING THE DEAL

Looking Beyond 'Needs'

IF YOU LOOK AT A LARGE IT procurement deal comprehensively and objectively, its most crucial factors go far beyond a specific set of a given department's needs. Yet vendors' sales representatives are highly trained to identify these needs and to sell "solutions." And to the detriment of their bottom lines, flexibility or sanity in contracting issues, many customers believe that the needs of their departments or functional areas are the only important factors.

To do the best deal for your organization, you must consider that whatever you want to buy is just one part of a package. For example, a vendor's representative says, "Our equipment can handle your problems by providing these solutions, and it's within your budgetary constraints. We can deliver the entire system, within your time frame, and the system will provide a more than adequate performance level. Can we do business?"

If these are your main concerns, your response will most probably be yes. The vendor's representative then hands you a letter of intent and says: "Great! Sign here and we can get going." You sign because your primary concerns at that time are the four or five areas that the vendor has so carefully targeted. Good deal? Many times, the answer is no.

Although a given department's needs are important, they're often only a subset of a wide range of issues involving contractual, financial, operational, technical, procurement, end-user and senior management requirements.

Unfortunately, department heads, project leaders and end users often find out later that in their haste to satisfy only their needs, they overlooked some extremely important enterprisewide issues. For example, they may have paid more than they needed to, neglected to secure adequate contractual protection or done something that's incompatible with technical standards or long-term corporate goals. In essence, the customers may find they were sidetracked by a bad case of tunnel vision, compliments of a great sales job by the vendor's representative.

This micro view of the acquisition has a number of variations. The speed-of-doing-the-deal obsession during the Internet craze played right into this problem. A noticeable number of customers suffered vendor performance shortfalls — stern reminders that haste makes waste. They didn't get what they paid for because contractual assurances "took too much time" in the rush to get Web deals done.

In some situations, a vendor uses a financial concern to persuade the customer to sign up. The customer's CFO is searching for some impact to the bottom-line profit. So, an astute vendor structures an outsourcing or lease deal to provide massive, short-term financial benefits with very inflexible terms that lock the customer in for a very long time. In doing so, the customer surrenders future technological agility and options.

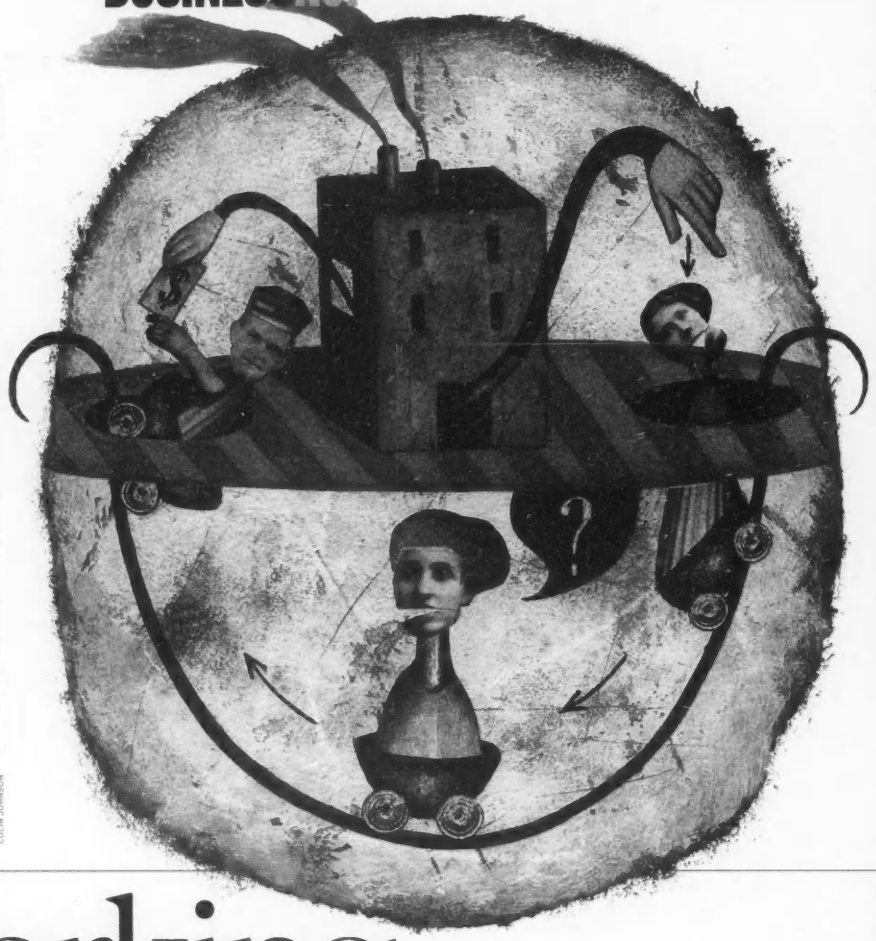
The solutions ploy is easy to overcome if the customer can resist buying on impulse. As any retailer will readily acknowledge, impulse buying is an important factor in retail consumer sales. Regardless of whether impulse buying is an appropriate justification for purchasing a new tie or a hanging plant, it shouldn't apply to the acquisition of a multimillion-dollar system. I've seen too many deals done too quickly with too little thought or analysis.

Most important, a broad-based negotiating team should be used to collect and prioritize a comprehensive set of negotiating objectives that represents the entire range of necessary professional disciplines mentioned above. Documenting these sometimes diverse prioritized objectives in a position paper for all team members and senior managers to sign off on is a key step in the process. Then, and only then, does your team have a consensus and a realistic set of needs to use as negotiating points.

Don't let the bells and whistles that you believe you so desperately need divert your attention from other considerations, such as cost, contractual assurances and flexibility. If you refuse to buy on impulse, and instead use a comprehensive set of negotiation objectives, this ploy should not be a problem to overcome. ◗



JOE AUER is president of International Computer Negotiations Inc. (*www.dobetterdeals.com*), a Winter Park, Fla., consultancy that educates users on high-tech procurement. ICN sponsors CAUCUS: The Association of High Tech Acquisition Professionals. Contact him at joea@dobetterdeals.com.



COLIN JOHNSON

Working Alternatives To Job Cuts

Layoffs may reduce short-term salary expenses, but the long-term consequences can be even more costly.

By Julia King

SINCE SALARIES make up the lion's share of corporate costs, cutting jobs is one of the fastest and most readily accessible ways to significantly reduce expenses. Layoffs, then, make great fiscal sense in the current down economy. Right?

Not necessarily in IT, especially if you consider the many and varied long-term risks of layoffs, which can range from a plunge in worker morale and productivity to higher costs for recruiting and rehiring technology professionals when the economy bounces back.

"Layoffs aren't cheap," says Ken Orr, a research fellow at Cutter Consortium, an IT consulting and research firm in Arlington, Mass. "They're usually done in response to earnings pressure from Wall Street, which looks only at [near-term] financials. But there are other costs associated with layoffs."

Consider Cisco Systems Inc., where worker productivity plummeted, re-

sulting in sales of $470,00 per employee in October 2001, down from $710,000 a year earlier. In the interim, Cisco laid off 8,500 workers, among other cost-cutting moves.

A Different Approach

A growing awareness of these collateral costs has companies searching for creative alternatives to handing out pink slips at the first sign of financial distress. Job sharing, shortened workweeks and voluntary pay cuts are among the measures companies are taking to trim costs before cutting jobs. They may not always be 100% successful, and some layoffs may still eventually be required. Yet the long-term value of such alternatives — helping to preserve morale and leaving a door open for key employees to return in better economic times — is golden, according to managers who have used them.

"We've already seen a payoff in terms of some of the programs we put in place," says Jeff Standridge, the executive in charge of organizational effectiveness at Acxiom Corp., a $1 billion database and information management company in Little Rock, Ark. About 60% of Acxiom's 5,000-plus employees work in IT.

Last April, Acxiom instituted a 5% mandatory pay cut for all workers (except those earning less than $25,000). In exchange, employees received stock options equal to the amount of salary they forfeited. Acxiom then followed up with a voluntary pay cut plan under which workers could elect to forfeit up to an additional 15% of their pay in exchange for twice that amount in stock options. More than one-third of employees volunteered for the additional pay cut.

"The immediate benefit we received from that is when we did get to the point of layoffs, we were able to get by with laying off half of the employees we would have had to lay off otherwise," Standridge says. In June 2001, Acxiom laid off 400 people, or 7% of its employee base, which now stands at 5,400.

"The intangible benefit is that 85% of our employee population became stockholders in the company. They have skin in the game, and now the company's future can be determined by people with a greater stake in the company," Standridge says.

When Acxiom does resume hiring, it will give preference to laid-off employees, who upon leaving were issued a special code to use when they submit their résumés online.

"Studies say that it costs one and a half to two times their annual salary to recruit and train an employee," Standridge notes. "Those costs are reduced considerably by bringing someone back on board that you laid off."

Cisco offers employees an option to retain one-third of their salaries plus their health insurance benefits and stock options if they voluntarily leave to work for any one of 29 approved nonprofit organizations. Cisco said the employees don't earn a salary from the nonprofit agencies, nor does Cisco receive a tax break under this program.

"At the end of that time, if they're interested in coming back and there are positions here, they're considered [preferred] internal candidates," says Michael Yutrzenka, senior manager for community investments.

So far, about 80 employees have signed up for the program, which Yutrzenka says costs Cisco about the same as a more traditional severance package. The key benefits for the company are positive public relations and the ability to keep tabs on workers it may want to rehire once the economy rebounds.

Prior to laying off 2,500 employees beginning last August, Hamilton, Bermuda-based Accenture Ltd., a global IT consulting firm, began piloting a one-year sabbatical program under which workers retain 20% of their salaries, all benefits, their profit-sharing allocations, use of a company laptop and access to Accenture's intranet in exchange for taking the year off. Employees can travel, take classes and even take another job as long as it's not with an Accenture competitor. At the end of the year, the workers also get their jobs back — guaranteed.

With 2,200 U.S. employees signing up for the sabbaticals, the program is now closed here, but it has been expanded to Accenture employees in the U.K., Sweden, Germany and Japan. "The primary goal of the program was trimming our costs in the short term plus keeping our access to people we've spent a lot of time and money recruiting and training," says Larry Solomon, Accenture's partner in charge of internal operations.

"By paying them 20% of their salaries, we're saving approximately 80% of salary costs plus [future] recruiting and training costs," which can run as high as $40,000 per employee, Solomon says.

Even though layoffs occurred at Acxiom, Cisco and Accenture, experts agree that having opted to exercise alternatives first will serve them well in the long term.

"Certain companies know how to treat their employees in good times and in bad," says Kazim Isfahani, an IT hiring and human resources analyst at Robert Frances Group Inc. in Westport, Conn. "But it's in the bad times that the good companies really establish themselves." ■

Jobs for Life

The Lincoln Electric Co. calls it "guaranteed employment for life." After working three years at the $1 billion Cleveland-based manufacturer, employees are guaranteed a lifelong job at the company.

Memphis-based FedEx Corp. has what it calls a "philosophy" of no layoffs. That doesn't mean they won't ever occur, but "if we get to a layoff situation, it would absolutely be as a last resort," says company spokesman Greg Rossiter.

The employment practices go by different names, but the spirit and business strategies behind them are the same. By shunning downsizing as a matter of corporate values, both companies are looking to create a fiercely loyal and productive workforce, which in turn generates high customer satisfaction ratings and bottom-line results. And so far, it's a strategy that seems to work well, in both good economic times and bad.

Lincoln Electric CIO Chuck Mehlman says he can't remember the last time anyone quit his firm's 100-person IT group – before or since the dot-com boom and bust.

FedEx, meanwhile, has reduced the hours of certain hourly workers, such as warehouse employees, but so far the company hasn't laid off anyone, which Rossiter says positions the shipping giant well for when the economy bounces back.

"We feel we'll be extremely well positioned when the economy does turn up, because we'll reap the benefits of morale and have avoided the negative impact to morale that layoffs engender," Rossiter says. "What differentiates a company in any services industry is its people, and we simply can't afford to put that at risk."

– *Julia King*

Layoffs As a Last Resort

Seven steps to take instead of issuing pink slips:

1. **Cut pay.** Offer stock options in exchange for lower salaries.
2. **Shorten the workweek** for hourly and part-time workers.
3. Request that workers take **unpaid time off.**
4. Pay workers a **stipend** to leave and work short term for a nonprofit.
5. **Reconstruct staff responsibilities** so workers can share jobs.
6. Launch a formal **sabbatical program.**
7. **Share IT employees** with other companies.

Damage Control

If it comes down to layoffs . . .

- **Look beyond salary.** Closely study each employee's skills and evaluate how his absence will impact future projects and teams.
- **Don't sit on bad news.** Promptly inform employees so they can make the most of prime IT hiring months. Companies hire more technology workers during the first three months of the year than during the other nine months combined.
- **Leave the door open.** Give laid-off employees the first crack at open positions when hiring resumes. Acxiom issued laid-off workers a special code to flag their résumés for future job openings.

IT Hiring 2002

This is the latest in a series of articles on IT career issues in today's turbulent job market. Last week, we looked ahead at the **2002 IT hiring forecast.** In the Jan. 28 issue, we offer advice on **how to survive a pink slip.**

ROI: It's About People, Not Numbers

Fear, inaccuracy and less-than-honest estimates are all part of the measurement challenge.
By Melissa Solomon

SINCE TELLABS INC. put in new procedures for measuring return on IT investment a year ago, "it's all been perfect," says CIO Cathie Kozik. Then she laughs.

The Naperville, Ill.-based communications equipment maker, like most companies implementing new ROI measurement processes, has faced obstacles. The biggest have been resistance from an "action-oriented" staff, inaccuracy of business cases and a lack of honesty — from business managers who don't want to see budget cuts and from staffers who worry that they'll automate themselves out of their jobs, says Kozik.

"We wound up spending more time swapping e-mails about why we didn't want to do it than it took to do it," she says of one of the company's first projects that measured ROI.

Business unit managers, with help from IT, are responsible for determining project costs. But to overcome the honesty and accuracy problems, financial controllers from each unit oversee the calculations.

To reduce cultural resistance, managers keep business cases simple — a page or two. "Don't make it bureaucratic," Kozik advises. "Don't make it so long and laborious that people don't want to do it."

Curtis Robb, chief technology officer at Delta Technology Inc., the IT arm of Atlanta-based Delta Air Lines Inc., says there are critical issues that business cases must address to ensure ROI. The first is total cost of ownership. Each of Delta's business teams must develop plans that look ahead four years, he says. They look at not only the purchase price, but also the "tail behind that purchase price" — hardware, software, maintenance and support, Robb says.

The second issue is finding the right level of support. For instance, a round-the-clock maintenance contract is wasted if users can wait a few days for a response. "Rightsizing" maintenance contracts has helped Delta shed $10 million in expenses, says Robb.

Standardizing technology has also helped the company save on training and development costs. For instance, Delta's airline operations unit was able to cut the development time on a project in half because it used standardized middleware from another project to build in real-time capability, rather than developing the technology from scratch, Robb explains.

> We wound up spending more time swapping e-mails about why we didn't want to do it than it took to do it.
>
> CATHIE KOZIK, CIO, TELLABS INC.

The final issue is time to market. At Delta, "solution architects" are assigned to projects from the start to help create a blueprint and determine a timeline, says Robb.

Oversight is another way to ensure that projects bring returns, says Allan Woods, CIO at Pittsburgh-based Mellon Financial Corp. Woods chairs a technology review board that meets monthly to review each IT proposal over $500,000. Then the projects are brought back to the board each month to make sure scope, costs and time frames are on target, he says.

But implementing ROI standards must be a gradual process, Kozik warns. If Tellabs forced its ROI process on workers, "it would have collapsed under its own weight," she says. "Instead of going from 0 to 120, we're going from 0 to 30, 30 to 60." ◗

What Lies Beneath

The devil is in the details. That's become a mantra for Mike Smith, director of e-business at Clariant International Ltd., a Muttenz, Switzerland-based specialty chemicals company.

Smith acknowledges that his team got temporarily caught up in the hype of e-business. But two years ago, when it looked closely at the online tools available for simplifying business processes and moving them to the Web, the team realized there were no cost-cutting guarantees.

"Don't assume, like people did in the middle of the e-hype, that you have to do it because it's going to save you money," Smith says. "If you don't get into the detail, you can't change your business processes to get the cost out."

By examining purchasing records, Smith and his team found that Clariant bought a high volume of low-cost supplies, such as notebooks, printer cartridges and laboratory equipment, from catalogs. They also discovered that Clariant's paper-based procurement process added between $50 and $100 to each transaction. Storing and maintaining backup supplies of machinery parts boosted each product's cost by 30% to 50%.

Smith and his team figured that online procurement might cut some overhead as well as simplify workers' jobs and free up their time so that chemists, for instance, could spend more time doing lab work and less time on administrative tasks.

That's when the real work began, says Smith. Clariant formed three teams. The first group cut the company's multiple maintenance, repair and operations suppliers down to a few key vendors based on factors such as high-volume discounts and reliable service (overnight in many cases, which reduced the need to store most supplies).

The second team, consisting of accounting, operations and purchasing staffers, analyzed the number of annual purchases that could be made from an electronic catalog and looked at the procurement chain to see which steps could be cut or streamlined.

The third team, the IT workers, weighed the "e-readiness" of suppliers and selected the most cost-effective technology. All three teams worked hand in hand under one project manager, says Smith.

The final step was conducted by a steering committee of senior managers who convinced workers of the value and simplicity of the new system.

"It has to be real easy," says Smith. "Easier than thumbing through a catalog."



SMITH: Working online won't automatically save you money.

If any details were skipped, the $2 million project might not have met its targeted 30% to 40% internal rate of return, says Smith. Based on the demonstrated savings in Germany, where the pilot took place, the online procurement process is being planned for worldwide rollout, beginning with Brazil, France, Switzerland and the U.K. this year, he adds.

– *Melissa Solomon*

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"Waiter! There's soup on my fly!"

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Training: Spending to Rise for Business, Security Skills

Project and relationship management skills are key to bringing IT projects in on time and within budget. By Julekha Dash

SMART MANAGERS aren't using tighter budgets as an excuse to put IT training on the back burner for 2002. Indeed, spending on corporate IT and business training in the U.S. is expected to increase by 6.5% next year. growing from $22.3 billion to $23.8 billion, according to Cushing Anderson, an analyst at Framingham, Mass.-based research firm IDC.

And the top training priorities for IT managers facing financial uncertainties and other risks are security and business skills.

Because the budget squeeze magnifies the need to keep IT projects on schedule and within budget, a lot of IT workers will be sent to training to improve their project management skills, says David Foote, managing partner of Foote Partners LLC, a workforce consultancy in New Canaan, Conn. Following relatively flagrant spending on dot-com projects, companies have become decidedly more guarded about how they spend money on IT projects and how well those projects are managed. "There is more accountability now" and less tolerance for projects that go off deadline or over budget, says Foote, who is also a *Computerworld* columnist.

At some companies, managers plan to provide project management training that's more sophisticated and company-specific than training has been in the past.

For instance, Tim Stanley, vice president of IT at Las Vegas-based casino and hotel operator Harrah's Entertainment Inc., plans to hire a training firm to help develop project management courses that are customized to the particular challenges the company's IT workers will face in the coming year.

Harrah's IT employees will be certified by the Project Management Institute in Newtown Square, Pa., by the end of this year or early next year, says Stanley. The specialized project management courses will help employees develop expertise in handling systems in the face of mergers and acquisitions, developing new software and rolling out new systems, he says.

For its part, USAA plans to invest more in business and soft skills training in 2002, says Bob Ingram, the San Antonio-based insurance company's senior vice president of property and casualty systems.

For instance, USAA's training department plans to tap line executives to teach IT workers how to better handle office politics and manage customer relations. Ultimately, the goal of these courses is to "try to run technology as a business," he says.

Although USAA plans to invest in other training areas, such as security and software development, spokesman Tom Honeycutt says the company expects to receive the biggest training payback to be in improving project management and other business expertise. That's because these skills will affect all areas of work.

The company plans to increase total training spending from $7,200 per IT employee to $10,000. In June, USAA was selected by *Computerworld* as one of the top 10 places for IT workers in the area of training.

Security-Conscious

Not surprisingly, security training will also be a high priority in 2002, according to IT managers and analysts. In particular, cybersecurity and disaster recovery training will be hotly pursued, says Jerry Luftman, executive director and distinguished service professor for the graduate information systems programs at the Stevens Institute of Technology in Hoboken, N.J. He cites high-profile hacking incidents last year such as the much-publicized infiltration of Microsoft's Web servers in addition to the Sept. 11 terrorist attacks on the U.S. as serving as spurs to that focus.

"If you're perceived as weak in security, it could affect whether people want to do business with you," Luftman says.

USAA plans to spend 10% of its IT training budget to enhance its security policy training, says Susan Chisholm, director of IT learning systems at USAA. This will involve teaching employees what to do if they receive a suspicious e-mail, or what type of computer activities are considered normal and what should prompt further investigation, she says.

Dash is a freelance writer in Lewes, Del. Contact her at mail@julekhadash.com

U.S. IT Training Spending

Among various applications, U.S. IT training is projected to increase most for CRM and ERP software, according to IDC. (Dollar amounts are in millions and are based on revenue taken in by training firms.)

	1999	2000	2001	2002	2003	2004	2005	2000-2005 CAGR*
CRM technical training	$293	$369	$469	$599	$769	$990	$1,129	25.1%
ERP (accounting, HR, materials management)	$1,030	$1,196	$1,480	$1,781	$2,123	$2,457	$2,775	18.3%
Collaborative applications (e-mail, groupware, scheduling, conferencing)	$670	$687	$718	$758	$819	$872	$904	5.6%
Word processing	$472	$497	$525	$550	$565	$610	$639	5.2%
Other (such as business performance management)	$593	$624	$652	$704	$671	$652	$642	1.0%
Total	**$3,058**	**$3,372**	**$3,843**	**$4,392**	**$4,948**	**$5,581**	**$6,088**	**12.7%**

*COMPOUND ANNUAL GROWTH RATE

Quick Link Some companies are leaning more heavily on e-learning to simplify training and cut costs: www.computerworld.com/q?25919

Some Sanity Returns to IT Hiring

Old Economy companies that offer regular paychecks look good again.
By Pimm Fox

opinion

REACHING THE END of a job interview, the human resources manager asked a young engineer who was fresh out of MIT, "What starting salary were you thinking about?"

The engineer said, "In the neighborhood of $125,000 a year, depending on the benefits package."

The interviewer said, "Well, what would you say to a package of five weeks' vacation, 14 paid holidays, full medical and dental coverage, a company-matching retirement fund of up to 50% of salary, and a company car leased every two years — say, a red Corvette?"

The engineer sat up straight and said, "Wow! Are you kidding?"

The interviewer replied, "Yeah, but you started it."

This apocryphal scenario accurately describes the upheaval in IT recruiting. The hockey stick of big bennies and stock options has given way to hard-core power plays. As layoffs at once high-flying and seemingly invincible IT vendors such as Cisco Systems Inc. and Sun Microsystems Inc. and hundreds of Internet bombs push IT talent and experience onto the market, the law of supply and demand appears to finally be taking hold.

This means greater availability of experienced IT workers, salaries that are more in line with traditional corporate compensation, more leverage for hiring managers and all the fancy Aeron chairs you might want — at fire-sale prices.

According to Ravi Aron, assistant professor of operations and information management at the University of Pennsylvania's Wharton School in Philadelphia, the tech bubble of stock market valuations created an artificial inflation of value when it came to hiring IT talent. "If you consider IT as a scarce resource to be allocated, it responds to market prices," says Aron, "and you had a situation in which the artificial market cap of companies was used to drive up the salaries and compensation of IT personnel."

The acute shortage of qualified IT professionals even drove Congress to increase the availability of H-1B visas. "Of course," Aron says, "you would rather work for a company that promised you lots of money in the sexy Internet sector than working at some place like a Boeing."

But the economics were flawed, like purchasing gold with tulips. So now, IT job applicants are asking questions such as: What's the salary? Is this company going to be around next year? Does it have real customers?

Companies are now able to hire IT workers whose maturity and understanding of technology value are more closely aligned with more prosaic areas of the enterprise, such as middleware and legacy system integration.

Happily, the technology expertise needed to link internal, back-end systems isn't that dissimilar from that needed to develop and integrate flashier front-end, Web-enabled ones.

"The big difference is in more complex project design and management," says Aron.

That's the type of IT designed to bring value to a company by cutting costs and improving efficiencies. And so what if it isn't part of the New Economy? It's more satisfying and rewarding to be part of the permanent economy — and the pay is better.



PIMM FOX is *Computerworld*'s West Coast bureau chief. Contact him at pimm_fox@computerworld.com.

Poor Layoff Practices Cause Long-Term Damage

70% of laid-off workers wouldn't recommend that others work at their former company

67% would never work for the company again, even if offered a job

54% wouldn't recommend the company's products or services

Base: Online survey of 1,200 laid-off workers (November 2001)

SOURCE: ANDERSEN, CHICAGO

Employers to Pay Top Dollar for IT Specialists

Job title	*2002 salary range*	*Change from 2001*
Database manager	$83,000-$114,000	Up 4.8%
Disaster recovery specialist	$57,000-$86,000	Up 3.1%
ERP integration manager	$76,000-$103,250	Up 2.9%

SOURCE: RHI CONSULTING, MENLO PARK, CALIF.

Forensic Detectives

Cybercops. Digital sleuths. Call them what you will, the emerging ranks of IT forensics professionals not only solve systems crimes — they can also add to the bottom line. By Deborah Radcliff

SOMETHING LOOKED FISHY in PayPal Inc.'s merchant account system. Late in 2000, hundreds of new accounts were being opened under the same names, including Hudsen and Stivonson. PayPal's antifraud team was dispatched. Investigators tied the accounts to a single IP address that used Perl scripts to automatically fill in applications that opened the accounts using stolen credit card numbers.

Those accounts were then used to purchase approximately $100,000 of computer equipment on eBay. And, from the looks of things, preparations were being made to turn credit into cash by depositing charges as payments into the PayPal accounts and then to an outside bank account.

That's when the FBI called asking for help examining the computers of two suspects from Russia with PayPal account information on their computers. PayPal's evidence and support helped the FBI charge Alexey Ivanov and Vassili Gorchkov with multiple counts of wire fraud in May.

Forensics Clues

Observing cybercrooks in its midst last summer helped PayPal develop a pattern-analysis fraud prevention tool that has greatly reduced its fraud rates. In late October, PayPal's chief technology officer, Max Levchin, who is originally from Ukraine, deciphered the following conversation on an Internet Relay Chat channel used by Russian credit card thieves.

Thief No. 1: What's the deal with PayPal? – I add some fresh cards in, they restrict immediately!

Thief No. 2: They see every little thing there now. Before, I had an account there, everything was cool. But then someone sent me some cash, and they just restricted the account. In short, PayPal is no good anymore.

Thief No. 3: It's time to move on to something new.

But PayPal's cybersleuthing also improved PayPal's bottom line by leading to the development of a pattern-matching fraud prevention system that has reduced PayPal fraud rates to 0.5% — well below than the average e-business fraud rate of 1.3% to 2.6%, according to Stamford, Conn.-based Gartner Inc.

"We found tremendous value in having these skills in-house," says Ken Miller, director of the 75-person fraud control group at PayPal, a Palo Alto, Calif.-based online payment processor. "A lot of our competitors have gone out of business because of fraud. We were able to drop our fraud rate significantly."

Because more and more evidence is digital these days, people with expertise in computer forensics and network/Internet investigations are being called upon to answer such questions as how someone got in, what systems were affected and how, how to repair them and how to prevent such incidents from happening again, says John Tan, research scientist of forensics at @Stake Inc. in Cambridge, Mass.

While forensics and investigative work are each highly specialized, they both require similar skills: strong network and systems engineering expertise (to know where evidence, including erased files, hangs out on the network), the ability to think analytically, an inclination toward thoroughness beyond tedium, knowledge of hacking tools and techniques, and the ability to follow your nose, say forensics professionals and employers. An investiga-

tive background in government, the military, law enforcement, or banking and legal support is also important.

Using freeware and commercially available tools, a computer forensics investigation starts with a mirror-image backup of a computer system and then proceeds with keyword searches through commonly used applications, file systems and the slack space where erased data resides until overwritten, says Charles Neal, vice president of cyberterrorism detection and incident response at Exodus Communications Inc., a Santa Clara, Calif.-based provider of Internet hosting services for businesses.

In a recent case where a client suspected an IT group of sabotaging its systems, a forensics examination of the file directories, e-mail files and slack space on the suspects' hard drives linked the suspects to a disgruntled former executive who was acting as the master saboteur, says @stake's Tan.

This evidence was presented to the disgruntled IT employees when they were fired to discourage them from filing a wrongful termination suit. If they do file suit, the employer can present the evidence in court.

The key to forensics is the ability to follow your nose, a skill most commonly found among those with law enforcement backgrounds, like Neal. Once a special agent at the FBI, Neal led the investigations of the infamous Kevin Mitnick and Mafiaboy.

But innately curious technologists like Dave Dittrich also fit the bill. Dittrich, senior security engineer at the University of Washington in Seattle, is well known in the forensics community. His prolific documentation (*www.washington.edu/people/dad*) on attack methods and viruses is invaluable to anyone pursuing a career in forensics.

"I grew into security and forensics work because I like to know the nitty-gritty of how things work," says Dittrich, who trained himself to use C and Unix while working at The Boeing Co. prior to joining the university as a systems administrator.

"As more of my computers got compromised, I learned more about security and hacking tools," he says. "I was reverse-engineering things like the Trin00 virus, and at the same time continued to grow my networking knowledge by reading a lot in my off hours."

Techno-legalities

Increasingly, companies are hiring forensics and incident-response consultants to uncover the sources of fraud, intellectual property theft or employee misuse. Forensics also plays a role in corporate due diligence work, says Michael Anderson, founding president of New Technologies Inc., a 5-year-old forensics consulting and support firm in Gresham, Ore.

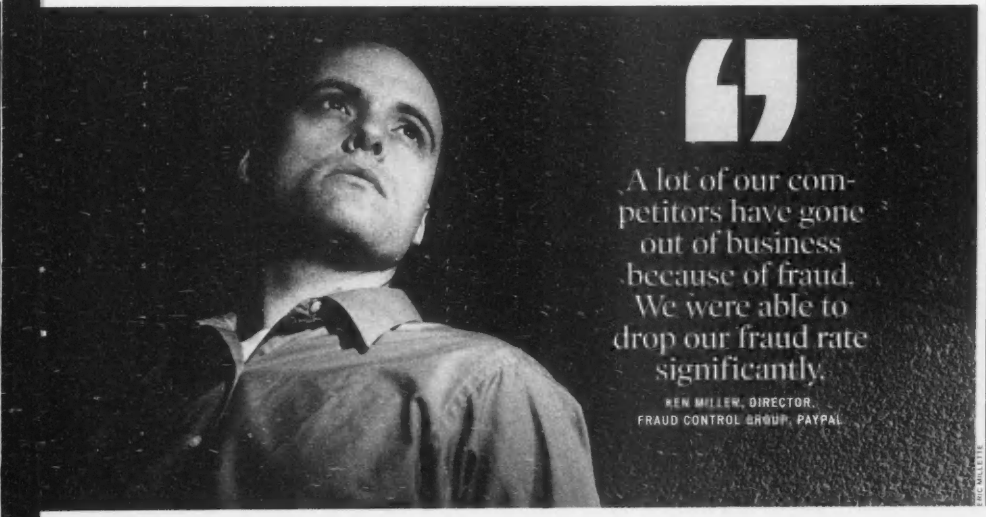
People in this field need to know not only where evidence might reside on a network but also how to retrieve it. And, if there's any possibility that the evidence will appear in court, it must be gathered legally, says Tom Arnold, CEO of CyberSource Corp., a Mountain View, Calif.-based payment and risk management service for online merchants. Therefore, investigators must be meticulous when gathering and logging information, and they should adopt standard procedures for gathering evidence.

"If we're tracing a scam site, we need as much information as we can gather — where the money is, where the credit card accounts are, hosting companies, who's aiding and abetting, and so on," says Chris Brandon, president of Brandon Internet Services, whose clients include backbone and service provider organizations. "We validate and document the evidence, then turn it over to our clients or sometimes to the authorities, and tell them to look for themselves and check it all out."

Brandon and others say the work is rewarding, particularly since they can get done in hours what takes weeks or months through court and law enforcement channels. Exodus' Neal concurs.

In the private sector, says Neal, investigations are built on relationships between affected parties — not on jurisdictional and international laws. "When I was in the FBI, if I called up UUNet to say one of its IP addresses is attacking us, they'd ask me for a subpoena," Neal says. "[Now] UUNet cooperates with us because the next day, the shoe's on the other foot, and they'll need our help."

Quick Link Find forensics training resources and take a look at the ideal forensics job candidate on our Web site: **www.computerworld.com/q?1450**



Job Watch

HIRING OUTLOOK:
Despite a new interest in forensics work since the Sept. 11 terrorist attacks, forensics placements are still slow, according to Tracy Lenzner, founder and president of LenznerGroup, a security job recruitment firm in Las Vegas. Currently, Lenzner has over 100 résumés on file but no jobs to offer her clients. But Lenzner and prospective employers expect the market to pick up in eight months.
Salary range: Hands-on forensics analysts: $85,000 to $120,000; Directors: $110,000 to $160,000 Add 10% for consulting.
SOURCE, LENZNERGROUP

REQUIRED SKILLS:
Computer forensics: This field requires the ability to analyze systems to uncover evidence in such places as unallocated slack space (where deleted files remain until overwritten); temporary files; hex files; log files; directories; applications like e-mail, Word and Excel; and hardware such as read-only memory and flash BIOS. Forensics professionals must know procedures and tools for evidentiary image backup and documentation. Forensics plays a role in civil litigation and in investigations of intrusions, employee misuse or wrongdoing, and intellectual property theft.

Network investigations: This involves tracking intrusions and outbound intellectual property leaks through TCP/IP networks and across multiple jurisdictions by analyzing Internet Protocol addresses, system logs and packet header information. You must also know how to set up network sniffers (listening and logging software), observation traps and domain name lookups. Maintaining relationships with backbone service providers, telecommunications firms and hosting services is also key.

Internet investigations: People in this field document evidence of scams and frauds conducted over the Web through IP lookup tools, domain name registries and other public sources of information. An understanding of TCP/IP networking, logging, network addressing and packet headers is required.

– Deborah Radcliff

MORETHIS ISSUE

To read case studies illustrating the tools and methods forensics investigators use to nab criminals, **see page 36.**

Dear Career Adviser:

In your response to "Lost in Arizona" [Business, Dec. 3], you mentioned that becoming an independent consultant requires significant tax reporting. What do I need to do to go out on my own? — CONTRACT CONSULTANT

Dear Contract:

In the 1990s, self-employment boomed for contract recruiters and technical consultants alike. But more recently, demand for unemployment compensation benefits has soared, and independent contractor consulting revenues have plunged.

The result if that state unemployment agencies and the Internal Revenue Service carefully scrutinize whether a worker's true status is "independent consultant" vs. "temporary employee" and whether additional taxes are due on both federal and state levels.

Reclassifying someone from consultant to employee status can mean additional taxes and penalties for the employer. It can also create financial consequences for the consultant.

Therefore, you might want to establish your business as a corporate entity with a federal tax identification number and develop a client list showing that you serve more than one company at a time.

You can also bolster your independent status by getting your company included on a client's vendor list as an approved supplier. I would advise you to do this by making sure your work agreements are between the company and your business entity, rather than between your client and you as an individual.

Dear Career Adviser:

I'm a Unix systems administrator who is being offered a new position, but I'm not sure about the category of exempt vs. nonexempt. All the company has told me is that exempt means that they don't have to pay me overtime. Is there more to it than that?

— OVERTIME PAY

Dear Overtime:

Generally speaking, the Fair Labor Standards Act of 1938, also known as the "wage and hours" law, establishes categories of workers and specifies whether they're entitled to hourly and overtime pay.

Nonexempt employees generally receive hourly wages, including overtime pay. Exempt employees, usually professional or management staffers, aren't paid on an hourly basis and are therefore exempt from overtime pay.

The law has some exceptions, however, and IT professionals who earn at least $27.60 per hour or $170 per week and whose primary duties fall into certain categories are exempt.

Here's a more meaningful explanation: Exempt jobs are the preferred track for a professional career path and management, says John Tebbets, executive vice president at JDT Staffing Consulting Inc. in Brentwood, Calif. Therefore, you are actually being offered a professional job whose category indicates a good future. Take it. ◗



FRAN QUITTEL is an expert in high-tech careers and recruitment. Send questions to her at **www.computerworld.com/career_adviser.**

WORKSTYLES

It's All Critical in a Department of One

With all the focus on IT as a strategic priority and on visionary IT leadership, it's sometimes easy to forget the little guys who like to roll up their sleeves and dig into a networking conundrum and who keep their companies humming along smoothly. It's also easy to forget that some companies run just fine without a CIO and a full-blown IT management staff.

Bob Johnston is the lone IT employee at CJRW, an award-winning, $70 million advertising and public relations firm — and he likes it that way. While his job is largely operational, he nonetheless feels that he's contributing to the company's strategic mission.

Major clients: Alltel Corp., Arkansas Parks and Tourism, Claudia's Canine Cuisine, NutriPeak.com and Hornbeck Seed Co.

Who do you report to? The operations director.

Number of employees (end users): About 130.

Mission-critical systems: "E-mail for communication with our clients, and a job-tracking system called JMS (Job Management System) developed for us by a company in New York. It's an Oracle database system for tracking billable hours. We don't have client extranets or an intranet — we just use e-mail and sneakernet because we're all so close anyway. We have an Ethernet network running AppleShare, with AppleShare file servers and a Windows NT file server."

Major IT projects: "Just your standard desktop computer replacements and upgrades. We're mainly a Mac shop. We're looking at upgrading to the OS X operating system this time next year, but there are very few applications for it now. James Little [from the company's Imazing Web services division] is developing a contact management database for use in his department. If it works out, we'll implement it on a department-by-department basis."

IT training in 2002: "I'm looking into Windows 2000 client training."

Employee reviews: Annual.

Bonus programs: "We're ESOP-based, so employees get a percentage of revenues in the good years."

Workday: "Formal hours are 8 to 5. I usually get here anywhere between 4:30 and 6:30 in the morning and leave between 5 and 6."

What's your biggest challenge as the solo IT person in your office? "Trying to educate employees that a lot of the bells and whistles and frills on computers are not always the best thing for the business. Like screen savers. And MP3 devices. So many of them have software that conflicts with our system."

Do you feel you're contributing to the company's strategic mission? "Yes. I make sure the company gets the right equipment, and I make sure we use it. I have a good working relationship with my users. They leave the IT issues up to me and trust me to help them out."

– Leslie Jaye Goff
lgoff@ix.netcom.com



CJRW

Type of business: A regional advertising and public relations firm

Main location: Little Rock, Ark., with a satellite office in Fayetteville, Ark.

Interviewee: Bob Johnston, systems administrator

Tenure: Since August 1992

THIS WEEK

ON THE CASE

Businesses with intellectual property and online customers to protect are increasingly conducting cyberforensics investigations to get to the bottom of electronic crimes committed against them. **PAGE 36**

CHIP TALK

Pat Gelsinger, chief technology officer at Intel, discusses 64-bit computing and other emerging technologies that will have an impact on corporate IT. **PAGE 38**



SAVING MEMORIES

The Shoah Foundation is using digital asset management technology to ensure that the stories of Holocaust survivors will live on. **PAGE 40**

HANDS ON

Upgrading a laptop hard drive ought to be simple with kits made specifically for the purpose. Unfortunately, reviews editor Russell Kay struck out. But he's still hopeful. **PAGE 43**

SECURITY JOURNAL

Installing a system for e-signatures seems like a good idea, but when a user's idea of a digital signature is a little different from what Vince Tuesday has in mind, our security manager's week goes rapidly downhill. **PAGE 44**

NICHOLAS PETRELEY

Fast Double-Talking

MANY THANKS to a reader named Kevin, who identified some eye-opening limitations in the new Windows XP feature called fast user switching. Fast user switching is Microsoft's version of multiuser computing. The feature, introduced in Windows XP, lets two or more users log in to the same computer at the same time.

Fast user switching is about as new to computing as the Charleston is to dancing. But it's a novel experience for Windows users. I suggested in my Nov. 5 column, "Lowered XPectations," that Microsoft called it fast user switching instead of multiuser switching because Microsoft has been calling Windows NT multiuser since its inception but is just delivering the feature now. After looking into the issues Kevin raised, I'll have to retract that. Microsoft is probably calling it fast user switching because Windows XP still isn't a multiuser system.

For example, according to Microsoft, you can't enable fast user switching at the client if your computer belongs to a Windows server domain. The company doesn't explain why this limitation exists, but I can guess at least one reason. Each machine on a Windows network has a unique NetBIOS name. I'm guessing that Windows domain servers arbitrarily associate every active user connection with the NetBIOS name of the machine a person used when he logged on. This means you can log on simultaneously from several machines as the same user, because the Windows domain server can distinguish among the various sessions by looking at the unique NetBIOS name for each machine.

As long as Windows clients were single-user systems, this approach worked fine because there was only one way to initiate two connections with the same NetBIOS name: You had to give two different client machines the same NetBIOS name, which would mean that your network was misconfigured.

Because fast user switching makes it possible for multiple users to log in from the same machine, it introduces a legitimate scenario where two or more users can try to authenticate against a Windows domain from a machine with the same NetBIOS name. Since Windows network services are still in the Dark Ages of single-user computing, the domain server probably still thinks your network is misconfigured and flags the attempt as an error.

Sometimes this kind of problem can be solved properly only if you upgrade every Windows machine on your network, servers and clients alike. Yet Microsoft solves it by disabling fast user switching when your computer is a member of a network domain. There's only one reason Microsoft would pass up a golden opportunity to force customers to perform a companywide upgrade, in my perhaps slightly jaded opinion, and that's because the problem is too difficult to solve without breaking all of its other applications.

So I'm wondering if Microsoft designed Active Directory around the assumption that there would be only one unique NetBIOS name for every user connection. If so, Microsoft will have to give Active Directory, along with every Office application designed to use it, a major overhaul before Windows servers can accommodate multiuser clients. The solution would still lead to a companywide upgrade, but it isn't something Microsoft can fix quickly. That may be why it had to take the quick and dirty route.

Kevin also found out that you can't use fast user switching and the off-line folders feature at the same time. Off-line folders let you disconnect from your company network and continue to work on documents that would normally be stored on network drives. You can synchronize any changes you make the next time you reconnect. If you use this feature from home, then your daughter can't play a game on your computer unless you close all your applications and log out first.



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As one might expect, none of these problems exists in a Unix or Linux environment. I have no problem authenticating multiple users against my Linux server from the same machine, and any of these users can use Unix utilities such as rsync, which provides the same features as off-line folders.

No doubt Windows will catch up eventually. But I think Windows XP is shaping up to be the best argument for a mass migration to Linux.

Cybersleuthing SOLVES THE CASE



AMANDA DUFFY

Computer forensic investigators use a variety of methods and tools to nab cybercriminals. By Deborah Radcliff

BUSINESSES WITH INTELLECTUAL property and online customers to protect are increasingly calling on cyberforensics investigators to get to the bottom of cases of employee wrongdoing and electronic crimes. "People are calling us when they find malicious software installed on their servers, when they're leaking sensitive information, when they suspect employee harassment — even in cybersquatting cases," says Ed Skoudis, vice president of ethical hacking at Predictive Systems Inc., a technology services firm in New York.

Forensic techniques vary depending on the type of investigation. For example, some investigative firms, like Brandon Internet Services, simply track and trace over the Internet and sort through other publicly available electronic records. Large businesses use cyberinvestigators to set up alarms and traps to watch and catch intruders and criminals within their networks.

To show a cross-section of different types of cyberinvestigations and the tools used to conduct them, *Computerworld* profiles three ways that organizations have dealt with crime —and sometimes criminals — in their midst.

The Case of the Freaky Accounts

■ *How techniques of Internet and database investigations thwarted two prolific Russian "carders" (credit card thieves):*

There were too many Hudsens and Stivensons opening accounts with PayPal Inc., an online payment processing company in Palo Alto, Calif. John Kothanek, PayPal's lead fraud investigator (and a former military intelligence officer), discovered 10 names opening batches of 40 or more accounts that were being used to buy high-value computer goods in auctions on eBay.com. So PayPal froze the funds used to pay for the eBay goods (all to be shipped to an address in Russia) and started an investigation.

Then, one of PayPal's merchants reported that it had been redirected to a mock site called PayPal.

Kothanek's team set up sniffer software, which catches packet traffic, at the mock site. The software showed that operators of the mock site were using it to capture PayPal user log-ins and passwords. Investigators also used the sniffer to log the perpetrators' own IP address, which they then used to search against PayPal's database. It turned out that all of the accounts under scrutiny were opened by the same IP address.

Using two freeware network-discovery tools, TraceRoute (*www.tracert.com*) and Sam Spade (*www.samspade.org*), PayPal found a connection between the fake PayPal server address and the shipping address in Russia to which the accounts were trying to send goods. Meanwhile, calls were pouring in from credit card companies disputing the charges made from the suspect PayPal accounts. The perpetrators had racked up more than $100,000 in fraudulent charges using stolen credit cards — and PayPal was fully liable to repay them.

"Carders typically buy high-value goods like computers and jewelry so they can resell them," says Ken Miller, PayPal's fraud control director.

PayPal froze the funds in those accounts and began to receive e-mail and phone calls from the perpetrators, who demanded that the funds be released.

"They were blatant," says Kothanek. "They thought we couldn't touch them because they were in Russia."

Then PayPal got a call from the FBI. The FBI had lured the suspects into custody by pretending to be a technology company offering them security jobs.

Using a forensics tool kit called EnCase (*www.encase.com*), Kothanek's team helped the FBI tie its case to PayPal's by using keyword and pattern searches familiar to the PayPal investigators to analyze the slack and ambient space — where deleted files remain until overwritten — on a mirror-image backup of the suspects' hard drives.

"We were able to establish a link between their machine's IP address, the credit cards they were using in our system and the Perl scripts they were using to open accounts on our system," Kothanek says.

The alleged perpetrators, Alexey Ivanov and Vassili Gorchkov, were charged with multiple counts of wire fraud in May. Gorchkov was convicted in September on 20 counts of wire fraud and is awaiting sentencing. Ivanov is still awaiting trial.

The Case of Mastering the Zombies

■ *How a systems and network examination helped the University of Washington kick a cracker out of 30 of its systems:*

The calls started on July 1. Frantic administrators were asking why subnets and IP addresses from Dave Dittrich's 50,000-node network were scanning and flooding them with denial-of-service (DOS) packets. "We were shutting affected machines off as we found them, but at one point, we had over 30 of our systems scanning and sending DOS attacks to over 9,000 targets," says Dittrich, senior security engineer at the University of Washington in Seattle.

Using Irvine, Calif.-based Foundstone Inc.'s Fport scanner (*www.foundstone.com/rdlabs/tools.php?category=Intrusion+Detection*), Dittrich's team located directory and file names uncommon to the Windows operating systems he ran on the network. The program also showed that all of the unusual directories and files were running communications through the same active, high-level port, which was also uncommon to standard configurations.

"That tipped me off that I should be listening to network traffic to and from that port, so I set up sniffers on those ports," Dittrich says.

Dittrich used a freeware sniffer called TCPDump (*www.tcpdump.org*), which captured the unusual traffic going to and from Internet Relay Chat redirectors commanding his machines to send the scans and DOS attacks. Dittrich unplugged the compromised machines from their wall jacks and, with a team of 40 people, spent two weeks contacting 9,106 downstream targets, reformatting the hard drives on compromised machines, and patching the Unicode vulnerability the attacker used to get in.

"It takes detailed network and host forensics to determine what type of malware is installed on the system and how it functions," he says. "That's why I post my findings to the general public: to help improve the training in forensics."

Dittrich's work, including details of the July attack, can be found at *www.washington.edu/people/dad*.

Following the Evidence

Digital forensics provides the clues to help answer these questions:

- How did someone break in?
- What systems are affected and how?
- How do we fix it?
- How do we prevent it from happening again?

SOURCE: JOHN TAN, RESEARCH SCIENTIST OF FORENSICS, @STAKE INC., CAMBRIDGE, MASS.

The Case of the Sneaky Engineer

■ *How forensics examinations of many machines helped one company retrieve its intellectual property and stop the bad guy from using it again:*

An engineer left a West Coast manufacturing company, which we'll call Company A due to pending litigation. When that same engineer turned up at Company B, a competitor, in September earning $10,000 more than market rate, Company A's executives worried that some of their intellectual property had been transferred to the competitor. Company A's executives filed a court motion for discovery, and then called New Technologies Inc. (NTI), a computer forensics support and training firm in Gresham, Ore.

In cases like this one, forensics rules must be strictly followed or evidence won't be accepted in court. The first rule is to not tamper with evidence, so NTI's team made a mirror image of Company A's engineering servers and the perpetrator's old computer. To do that, they used a tool called SafeBack, which captures and time-stamps the perpetrator's hard drive contents without altering the original, says Paul French, lab manager at NTI.

While NTI investigators found signs of file copying to removable media in the engineer's computer at Company A, French's team couldn't find empirical evidence of wrongdoing there. So under a court order for discovery, the NTI team then searched the suspect's home computer.

Using another NTI file search utility called FileListPro, the NTI team found that several product engineering drawings had been copied onto the home computer after the engineer had left the company. (FileListPro tells when a file has been created, accessed and modified.)

The engineer claimed that the clock on his computer had malfunctioned and that the drawings were copied while he was employed at Company A. But simple deduction told a different story. The date on a letter written in the same time period corresponded with the machine's time stamp on that letter.

This was enough evidence to prompt an investigation of the engineer's machine at his new employer. The team found drawings that were similar to those from Company A, but with some differences. But through searches using keywords like *diagrams* and the name of Company A, French says his team found an e-mail trail on the engineer's new desktop that "cinched it." The e-mails, which passed between the engineer and his girlfriend, detailed their mutual possession of the diagrams in question. One written by the engineer said that the investigators wouldn't be able to tie anything back to them. And another, written by the girlfriend, asked the engineer what he wanted her to do with the drawings he'd sent her.

The result: "a court injunction against this engineer and his company developing products based off our client's intellectual property," French says. "If they do come out with a widget too similar in design, they'll slap them with criminal charges." ◗

MORE THIS ISSUE

To learn about the skills needed to pursue a career as a computer forensics investigator, **see page 32.**

> We were shutting affected machines off as we found them, but at one point, we had over 30 of our systems scanning and sending DOS attacks to over 9,000 targets.
>
> DAVE DITTRICH, SENIOR SECURITY ENGINEER, UNIVERSITY OF WASHINGTON

Intel Puts Its Chips on The Table

Pat Gelsinger, vice president and chief technology officer at Intel Corp., leads Intel's Corporate Technology Group in Hillsboro, Ore., which includes the Intel Architecture Lab and Intel Research group. He also contributed to the design of Intel's original i286 and i386 CPUs. Computerworld's **Linda Rosencrance** *asked Gelsinger to comment on emerging technologies that will affect corporate computing.*

Of the interconnect technologies Intel is working on, which ones are likely to have the biggest impact on corporate computing? The five that I'm really excited about are optical, high-speed Ethernet, 3GIO (third-generation I/O), Serial ATA (Advanced Technology Attachment) and Infiniband. Those to me are the ones that redefine connectivity in the enterprise and in the data center in a fundamental and dramatic way.

What other technologies are likely to have a significant impact? Our goal with the Itanium processor family is to rearchitect the data center of the future. Today, that's filled with proprietary RISC-based machines, and our job is to move those to standard building blocks.

Will the IA-64 processor commoditize the 64-bit server market as the Pentium has done in the IA-32 space? [With IA-64], we're trying to deliver a building block for big-iron machines. It's not that those other ones are bad; they're all different, they're all incompatible, they're all forcing investment in areas that no longer are the things that IT cares about.

Intel has announced the 2-GHz Pentium 4 processor. How fast can you go? We're on path to deliver multibillion transistor chips in the next decade, operating in excess of 25 GHz. We're going to keep pushing away at clock speed. However, clock speed alone will become less and less a determinant of performance as we look forward to things like hyperthreading.

How will that work? Hyperthreading is the idea of doing more than one thing at once. In today's applications, when you finish one set of instructions, you go on to the next set of instructions and so on. In the future, we [will] have the transistor budgets and the technologies to have one microprocessor doing more than one thing at a time. This is reasonably well established in servers or high-end computing. We want to . . . bring this into the mainstream of computing. You'll see the first implementations start to emerge next year.

WHO IS HE?



Intel Vice President and Chief Technology Officer **Pat Gelsinger**, 40, comments on the future of 64-bit computing and other new technologies that will affect corporate IT.

What optical technologies are you developing that will affect IT? Optical redefined long-haul networking over the last decade. Over the next decade, [it] will have dramatic implications for metropolitan and campus data centers. We want to . . . get to the point where we're building direct optical interfaces onto our silicon component. That's a long-term vision, but . . . where an optical interface component might cost $10,000 today, over the next decade, I want to make it cost a penny.

I don't see [Intel building] optical transistors and things like that . . . in the near future, if ever.

Will applications need to change to leverage hyperthreading? Maybe. If Microsoft builds in the ability to have an operating system and a networking stack and the printing daemon running in parallel, and it's all part of the operating system, then the application could benefit from hyperthreading without requiring any modification to the application itself.

Imagine if I were running one of these cool, new dynamic runtime applications like a Java or a C# application and . . . the garbage collector, the [just-in-time compiler] and the dynamic runtime environment [were] separate threads running in parallel with the application. So my new C# application wouldn't need to be restructured for multithreading, but the underlying dynamic runtime environment would be.

The third example would be to put these capabilities directly into the compiler so that the compilers automatically generate those threads. So the application doesn't need to be rewritten; it just needs to be recompiled.

However, to get the greatest benefit from hyperthreading, yes, you would need to rewrite the application. But you're going to benefit from this well in advance of requiring this restructuring of the applications themselves, by any of the first three paths.

What will a typical server look like in three to five years? I see us building four- or eight-way machines that are clustered together to build really big machines. So I have a rack [of] 16 4u (1u equals 1.75 in.) slices, and each slice is an eight-way Itanium, and each of those is using hyperthreading.

I might have four threads running, so within a slice, I could have as many as 32 threads of execution going on. In a rack, I have 16 of these, and they're all clustered together using technologies like Infiniband. That's the mainframe of the future. . . . And that will blow away the price performance of anything that the alternative approaches will offer.

What will the desktop look like? Key technologies will allow us to repartition the form factor of the PC — things like 3GIO. And when you've done that, you can all of a sudden start separating. I can show you a system of the future where my computer is actually under the desk, and I have all of my I/O capabilities on top of the desk or even integrated into the LCD monitor.

I see form factors continuing to decrease, power efficiency becoming more critical, flat-panel displays becoming dominant and technologies like speech and audio being good enough that they are meaningfully deployed. The move to speech, pen and vision computing [will] really explode. ◗

Quick Link Does Moore's Law still apply? How will the Banias processor affect mobile computing? For more answers from Intel's Gelsinger, and for explanations of the technologies mentioned, visit **www.computerworld.com/q?a1440**.


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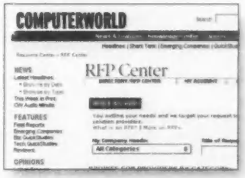
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Managing The Memories

The Shoah Foundation uses digital asset management to make sure the stories of aging Holocaust survivors live on. By Melissa Solomon

AFTER THE NAZI death camps were liberated, Rachel Goldman-Miller spent days drifting among thousands of shocked survivors, desperately searching for information about her relatives.

"Somebody said that they saw my brother in Auschwitz and that he was shot because he wouldn't put my mother in the oven," she recalls. "If it's true, I hope he died. I hope it is true."

While making the movie *Schindler's List*, director Steven Spielberg heard scores of stories from Holocaust survivors like Goldman-Miller and he came to a stark realization: With survivors reaching their 70s and 80s, it wouldn't be long before there were no witnesses left. So he created the Survivors of the Shoah Visual History Foundation to capture the stories on video so future generations can see and hear them directly from the sources.

Seven years after its creation, the Shoah Foundation, which has an annual budget of $10 million to $13 million (plus $30 million in technology donations), has collected more than 51,000 video testimonies from Holocaust survivors. But the larger story has been a challenge to piece together.

Just scheduling interviews with tens of thousands of survivors and eyewitnesses and recording them in 32 different languages and 57 countries has been a logistical quagmire, says Sam Gustman, the foundation's executive director of technology. To handle the load, his team created a homegrown production scheduling system with Santa Clara, Calif.-based FileMaker Inc.'s FileMaker Pro. But the bulk of the work is now focused on cataloging and disseminating the video and digital collection.

"It's an enormous challenge," says Connie Moore, an analyst at Cambridge, Mass.-based Giga Information Group Inc. "Digital asset management is . . . very much an emerging technology."

An 'Immature Market'

Digital asset management (also known as enterprise content management) is the process of categorizing, packing and indexing images or graphics. It's a mission-critical priority for media companies and museums, Moore says.

Movie studios and news corporations use digital asset management technology to archive film footage or photos. Other big users of digital asset management are companies with large image archives, such as automakers, which tend to run massive advertising campaigns, says Moore.

When the Web came along, it raised awareness about the need to catalog content, but it's still not seen as high on the hierarchy of needs in most industries, says Moore. She predicts that will start to change in the next few years, however, as Internet content and advertising grow. Most companies don't even have an effective way of cataloging their PowerPoint or Web documents, she says.

There are some tools that can automatically find the beginning and end of clips and simplify the video logging and metatagging process, says Lou Latham, an analyst at Stamford, Conn.-based Gartner Inc. The top vendors include Convera Corp. in Vienna, Va., and Virage Inc. in San Mateo, Calif., he says. But automated metatagging is an unfulfilled promise that he's heard from lots of vendors. "This is a very immature market," Latham says.

The Shoah Foundation is, in many regards, leading the way. It has 180 TB of archives and 400 TB of storage space available, according to Gustman. And in October, it was awarded a $7.5 million National Science Foundation grant — with IBM, The Johns Hopkins University in Baltimore and the University of Maryland in College Park as subcontractors — to advance voice-recognition technology.

"I think that would be nirvana," Moore says of the idea of using voice-recognition technology in digital asset management.



CATALOGERS SORT VIDEO at the Shoah Foundation's headquarters.

A Painstaking Process

The foundation's cataloging experts watch the videos and, using a customized back-end database donated by Emeryville, Calif.-based Sybase Inc., break them into segments. Those segments are assigned keywords from a master list of 21,000 topics, such as "hiding places" or "aid givers." The testimonies, recorded on 3M bit/sec. MPEG video (Hopkinton, Mass.-based EMC Corp. does the Shoah Foundation's media streaming), are cataloged with lists of keywords, text summaries describing the survivors, related documentaries focusing on topics such as the ghettos or labor camps they lived in, and past and present photos of them and their families.

So far, the foundation has cataloged about 5,000 tapes. At that rate, it would take a decade to catalog the entire collection, says Gustman. However, technological advances such as voice-recognition tools could speed up the process by several years, he says.

"In the most abstract sense, what do you do with 115,000 hours of video?" asks Shoah Foundation President and CEO Doug Greenberg.

Speech recognition could automate the process by assigning keywords and time stamps to videos. But voice-recognition technology is still awkward, and the Shoah Foundation has some challenges that could make it even less reliable: The people in the videos speak many languages, many of them have heavy accents, and they are occasionally overcome with emotion, making their words difficult to understand, says Greenberg.

Beyond the cataloging challenges, the Shoah Foundation is grappling with the problem of how to disseminate the material. It has eight documentaries and two educational CD-ROMs (with a third in the works), and it would like to make the testimonies available to the public. To guard the integrity of the collection and protect it from hate groups, the foundation has used secure fiber-optic networks to transmit the collection to museums and educational institutions.

Once the foundation gets a handle on these and other issues, it plans to use the fine-tuned process to capture other stories of genocide and hatred, says Greenberg. "Cambodia, Rwanda: It's a very, very long list," he says.



A SHOAH STAFFER interviews a Holocaust survivor.

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Emoticons and Internet Shorthand

DEFINITION

Emoticons are glyphs, usually representing stylized facial expressions, that are created mainly from short sequences of punctuation marks and are designed to convey an emotional tone in e-mail. Other types of Internet shorthand include various acronyms and abbreviations.

BY RUSSELL KAY

ELECTRONIC MAIL and Internet newsgroups are very efficient at sending digital text, and their asynchronous nature makes them valuable communications tools. However, both share one glaring fault: Their bare-bones ASCII text fails to convey the subtleties of meaning that we are accustomed to expressing via cues such as our tone of voice or body language when we are in direct visual or voice contact with another person.

One answer to that has been the development of shorthand symbols designed to convey specific attitudes, moods and emotions. We call them *emoticons*. The best-known one is the smiley, a sideways version of the smiley-face pin graphic originally developed by Harvey Ball in 1963 and never trademarked. The pin morphed into the :-) symbol (just tilt your head to the left) sometime around 1980, and Internet communications haven't been the same since.

Origins

Internet e-mail began 30 years ago [Special Report, Nov. 12], and those who used it did so mainly on terminals that had a single font of monowidth characters — and not all that many characters either.

In 1979, Kevin McKenzie of the Arpanet's MsgGroup made the following suggestion:

Perhaps we could extend the set of punctuation we use, i.e.: If I wish to indicate that a particular sentence is meant with tongue-in-cheek, I would write it so:

"Of course you know I agree with all the current administration's policies -)."

The '-)' indicates tongue-in-cheek.

Although the initial response was less than enthusiastic, the idea caught on and was extended to a number of variants created using different punctuation marks. Books have been published listing and describing emoticons, and some lists have collections of emoticons numbering in the hundreds. But in actual practice, only a few are widely used (see below).

In the 1980s and '90s, the popularity of text-only Usenet newsgroups and chat rooms grew dramatically. Many of the individuals posting messages in these forums tried to be sarcastic or ironic, but the absence of other cues caused others to take seriously remarks that were never so intended. This resulted in arguments and "flame wars." A "flame" is an exaggerated criticism, often involving name-calling. Emoticons solved some of these problems.

Not Graphics, Shorthand

In addition to emoticons, a kind of Internet shorthand grew up. In part, this was to save time by abbreviating some common phrases, but some of these abbreviations and acronyms also had considerable emotional content.

My two personal favorites are *<gdr>*, which translates to "grinning, ducking and running," and *ROTFLOL* — "rolling on the floor laughing out loud." As with emoticons, there are many variations.

This state of affairs continued essentially unchanged during the 1990s, but around the turn of the millennium, a whole new class of shorthand came into being, driven not by e-mail but by the availability of text messages over pagers and cell phones.

Short Messaging Service has become popular among teenagers and young professionals for exchanging messages while in school or meetings. They have created a much denser form of shorthand, and for a very good reason. Entering text on a pager or a cell phone that has only a typical 12-key phone pad is a tedious business, often requiring as many as four keypresses to enter a single letter.

Anything that can shorten the process is welcomed, and the result has been a kind of shorthand reminiscent of those old bus and subway ads offering to teach shorthand to budding stenographers: "If u cn rd ths u cn gt a gd jb." This is called *TXTING*, or texting.

A Basic Vocabulary

People have invented thousands of emoticons and abbreviations; these are but a sampling.

Basic Smileys and Other Expressions	
:-)	smiling face
;-)	smile with a wink; tongue-in-cheek
:-(	frown
:-#	my lips are sealed
:-D	laughing
:-o	surprised
:-O	shocked
8-)	smile, wearing glasses
:-]	blockhead
:-@	screaming
:-&	tongue-tied
%-)	brain-dead

Internet Shorthand	
<g> or <G>	grin
<gdr>	grinning, ducking and running
AAMOF	as a matter of fact
AFAIK	as far as I know
AFK	away from keyboard
BTDT	been there, done that
BTW	by the way
BYKT	but you knew that
CUL8R	see you later
F2F	face to face
FWIW	for what it's worth
FYA	for your amusement
GMTA	great minds think alike
HTH	hope that helps
IIRC	if I recall correctly
IMHO	in my humble opinion
IMNSHO	in my not so humble opinion
IOW	in other words
LOL	laughing out loud
NM	no message (used in subject line)
OIC	oh, I see
OTOH	on the other hand
OT	off-topic
ROTFL	rolling on the floor laughing
ROTFLOL	rolling on the floor laughing out loud
TIA	thanks in advance
TTFN	ta ta for now
TINAR	this is not a review
YMMV	your mileage may vary

A Trademarked Emoticon

:-(One well-known and widely used emoticon, the frowny (above), was actually granted trademark status (Registration No. 2347676) on May 2, 2000. The trademark holder is a Dallas-based company called Despair Inc., which markets a variety of humorous items that parody motivational themes.

At the time the trademark was granted, E.L. Kersten, Despair's chief operating officer, announced his intention to sue "anyone and everyone who uses the so-called 'frowny' emoticon, or our trademarked logo, in their written e-mail correspondence. Ever."

Kersten followed this up by filing a suit against more than 7 million individual Internet users alleging trademark infringement and requesting that separate injunctions be granted against each person.

The whole thing was a publicity stunt, of course, but the fact remains that the trademark is legitimate – or at least legal. Despair now sells frownies from its Web site (*www.despair.com*) for $0.00 each.

– *Russell Kay*

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Hard Swap for A Hard Drive

When your laptop needs a bigger hard disk, what do you do? Easy question, complex answer. By Russell Kay

RUNNING OUT of disk space is a bummer, especially on a laptop, where you can't just add in a second drive. I always seem to be on the edge of filling up the 6GB disk on my 2-year-old Dell Latitude as I test-drive new software. The only good answer to more space is to replace the existing notebook hard drive with a bigger one.

Unfortunately, this is a daunting task for most users. You have to back up everything on your current drive, install the new one, set up partitions with the Windows fdisk program, format the hard drive, and install the operating system and all your applications — it's easy to spend two or three full days just getting your data and working environment back to where you started from. Special migration software can help, but this becomes an IT-only procedure.



THE CMS PERIPHERALS EasyBundle kit can help your laptop boost its disk space.

Several products aim to make this process simpler. Basically, they all consist of a new hard drive, a special cable connecting the drive to a PC Card and software that copies everything from your old drive onto the new one. Considering that 60GB laptop drives are now available, this road was clearly worth exploring.

During the past several months, I have tried three such upgrade kits on my Dell laptop. How well did they work? I'd have to say that the operation was a success but the patient died.

Dead on Arrival

1 The first attempt involved a 30GB StrataDrive kit from Fountain Valley, Calif.-based Kingston Technology Co. (Kingston has since stopped selling this product, but it was actually made by and is still available from CMS Peripherals Inc. in Costa Mesa, Calif.) The drive is packaged in an antistatic mylar envelope whose edges are die-cut in a serpentine fashion to form a long, antistatic strap ending in an alligator clip that you attach to a metal screw or fitting on the laptop.

I followed the instructions to set up the drive, started the process and left it running, since it would take some time. Unfortunately, when I got back to check on it more than 40 hours later, it was still at the very same spot.

I double-checked with Kingston tech support that it wasn't supposed to behave like that, downloaded some newer software and tried again. And again. After the fourth attempt, involving the third software version, I gave up.

Yes! No.

2 Attempt No. 2 involved a $298 20GB EZ-Gig kit from Apricorn Inc. in Poway, Calif. This was similar to Kingston's CMS unit, though without the cute antistatic strap. I installed software on the machine, then shut it off and rebooted from a supplied floppy disk. When the system asked me to plug in the PC Card, I did so, and the transfer was off and running.

In under two hours, the transfer was finished. I shut down the machine, removed the hard drive and installed the new 20GB unit. When I turned it on, it ran perfectly. In fact, this was one of the simplest and most trouble-free installations of any combination hardware/software product I've tried in a long time.

Unfortunately, that wasn't the end of the story. After a week, the system refused to boot. It would get partway along and hang. It wouldn't even boot into Windows' safe mode. Booting from a CD and using several diagnostic tools confirmed that the drive had developed a bad spot in a critical area. Attempts to repartition and reformat the drive were unsuccessful.

This wasn't Apricorn's fault, and a paying customer would certainly be entitled to get the drive replaced.

Third Time's the Charm?

3 A couple of months later, I tried again. This time, I used a $289 CMS Peripherals 20GB EasyBundle kit. The upgrade process was familiar from attempt No. 1, but this time, it went smoothly. However, the software decided that my computer couldn't handle a 20GB drive without help, and it required me to install preboot software (Disk Manager from Ontrack Data International Inc. in Eden Prairie, Minn.). After this, the process was finished, and I swapped the new drive into my laptop.

Now, when the system booted, I got a preboot message on the screen, and the system stopped. Windows' ScanDisk diagnostic program said it couldn't find the end of the disk and gave me the choice of continuing or stopping. I continued, and after another "Are you sure?" prompt, Windows 98 came up just fine.

This pattern repeated every time I booted up, and I couldn't run the computer for more than an hour without running out of resources and having to reboot. I can't be positive that the problem was caused by the new disk installation or the Disk Manager software, but alas, the system was considerably less stable than it had been.

In the end, I went back to the 6GB drive. It was smaller but more stable, and it didn't natter at me every reboot.

Another Route

Three tries, no new hard drive. Was my experience representative, or just a string of bad luck? Given my experiences, I can't exactly recommend this procedure for upgrading a laptop's hard drive. I've had much better luck doing it the harder, old-fashioned way. However, there's a new process available that I haven't had a chance to try.

CMS has a hard-drive backup unit, ABS Plus, that plugs into a PC Card slot. In the latest version, the resulting backup disk is fully bootable. A CMS engineer said this is probably a better upgrade route today: Get the ABS Plus, make the backups, then just remove three screws and swap the two drives. No fuss, no muss.

I'm waiting to get a unit to test, because I'm still filling up that 6GB drive on my Dell.

User Indifference Thwarts Electronic Signature Effort

Vince's elation turns to disappointment after the marketing department asks for something simpler

BY VINCE TUESDAY

AN E-MAIL FROM the director of marketing put a spring in my step this week. He and I have locked horns over security issues in the past. Marketing always wants to develop new services and offer our clients access to them online.

Those are good business ideals, but marketing never seems to think about the fallout from such schemes. I've had to steer them away from the plans that were the most — well, I'd call them mad, and they would probably call them innovative.



SECURITY MANAGER'S JOURNAL

This healthy tension between taking risks to bring in new business and protecting our brand has meant that although we get on very well personally, professionally we often find ourselves in heated debates about new projects. But for once, the marketing director's e-mail seemed to show that we were perfectly aligned. He wanted to discuss electronic signatures on our Web site, with reference to distributing documents to shareholders and customers.

An e-mail like that makes me want to dance — in the past six months, I've put some effort into sorting out a decent system for pushing out public-key infrastructure and signatures to clients. The result is multivendor compatible, with a distribution system using Mountain View, Calif.-based VeriSign Inc.'s Secure Sockets Layer certificates to authenticate us to our clients.

This system wasn't backed by the business teams because they felt the time wasn't right. Although they didn't stand in the way, we had to beg and borrow the budget for software and equipment to get the system working. But this e-mail showed me that my work hadn't been in vain: Marketing now wanted to take advantage of the setup. No doubt the plan was to use digital signatures to ensure that the information that affects prices couldn't be tampered with while being downloaded.

I eagerly set up a meeting that day to discuss the details. I then shared the news with my team, smug about our foresight and how easy it would be to answer every request.

We went to the meeting room and found a harried marketing director. He was obviously concerned about how we could implement the technology swiftly enough to meet his usual aggressive deadlines, I thought.

Then he explained what he wanted. He wasn't interested in electronic signatures as defined in the Electronic Signatures in Global and National Commerce Act. He wasn't interested in ensuring confidentiality and authenticating employees' identities as they exchange company secrets.

No, he wanted to add the scanned images of senior managers' signatures to the bottom of pages to give them the appropriate feeling of authority. Could we relax the restrictions on size and file types at the e-mail gateway, he asked, so he could e-mail these enormous bitmaps to our customers?

That proud feeling sparked by the morning e-mail evaporated, leaving me with the sour task of explaining that while sending out such images posed few security risks, it wasn't such a hot idea and didn't fit with the image of our company being at the cutting edge of electronic document interchange.

Weeks that start well and then go wrong always end up worse than weeks that tick along in the middle or even in the lower half of success, and this one was no exception. After the disappointment of our electronic signatures misunderstanding, I faced a most difficult situation for a security manager.

It started with a manager taking me to a quiet corner. "We are sacking Bill today," he said. "As you know, he is a systems administrator on many of our key systems. Can you just make sure that he can't do anything bad? Thanks."

It wasn't the first time this had happened. Sometimes, we get a bit more notice, but at other times, we just receive a note after the fact. It was too late to fully protect against any malicious acts by this staff member, but in notifying us, his line manager had passed the buck. Now if anything bad happens, he can say that he notified the information security department and that we failed to take appropriate action.

Securing Systems

But what is appropriate in such a situation? In this case, we followed due diligence and changed the passwords and access keys known by this systems administrator, but if he were malicious, he could easily have installed a logic bomb or a back door into the system before he left. This administrator had even been involved in the deployment of the very security monitoring tools that we normally use to identify Trojan horses and therefore could well have known how to disable and circumvent the protections.

How could we protect ourselves without alerting him to our concerns? If we acted as if he might take malicious action, he might have felt untrusted and hence acted in an untrustworthy way.

Some companies deal with this problem in innovative ways. One firm had to get rid of several staffers at once, so it had a fire drill. Once everyone was in the parking lot, the firm disabled the swipe cards of the people they were sacking, so they couldn't get back in after the evacuation. That's not a very enlightened approach toward staff feelings, but it certainly was effective.

We couldn't take that approach and ended up just making a low-key password change. We will have to wait and see if he did anything bad, but nothing has been detected. I think we can trust him, but will we always be so lucky?

I hope the economy turns soon so that I can focus on dealing with foolish ideas about electronic signatures and reduce the time I spend changing passwords and protecting systems from people who leave against their will.

How do you deal with security issues when layoffs affect key employees? I look forward to your ideas in the Security Manager's Journal forum.

THIS WEEK'S GLOSSARY

Back door: This is an entry into a system left by a trusted insider so that he can gain access after official privileges have been removed. The greatest back door of all time was developed by Unix co-creator Ken Thompson. He modified the C compiler so that it would recognize when the log-in command was being recompiled and insert code recognizing Thompson's password, giving him entry to every system.

Normally, a back door could be destroyed by removing it from the source code for the compiler and recompiling the compiler. But to recompile the compiler, you have to use the compiler. So Thompson had the compiler recognize when it was compiling a version of itself. It then inserted the backdoor code into the new compiler.

Having done this once, he was then able to recompile the compiler from the original sources; the back door perpetuated itself invisibly.

Logic bomb: This is a piece of code included secretly in software that will perform malicious acts at a set time if not stopped by the writer. Disgruntled ex-employees have used logic bombs to punish companies for sacking them.

LINKS:

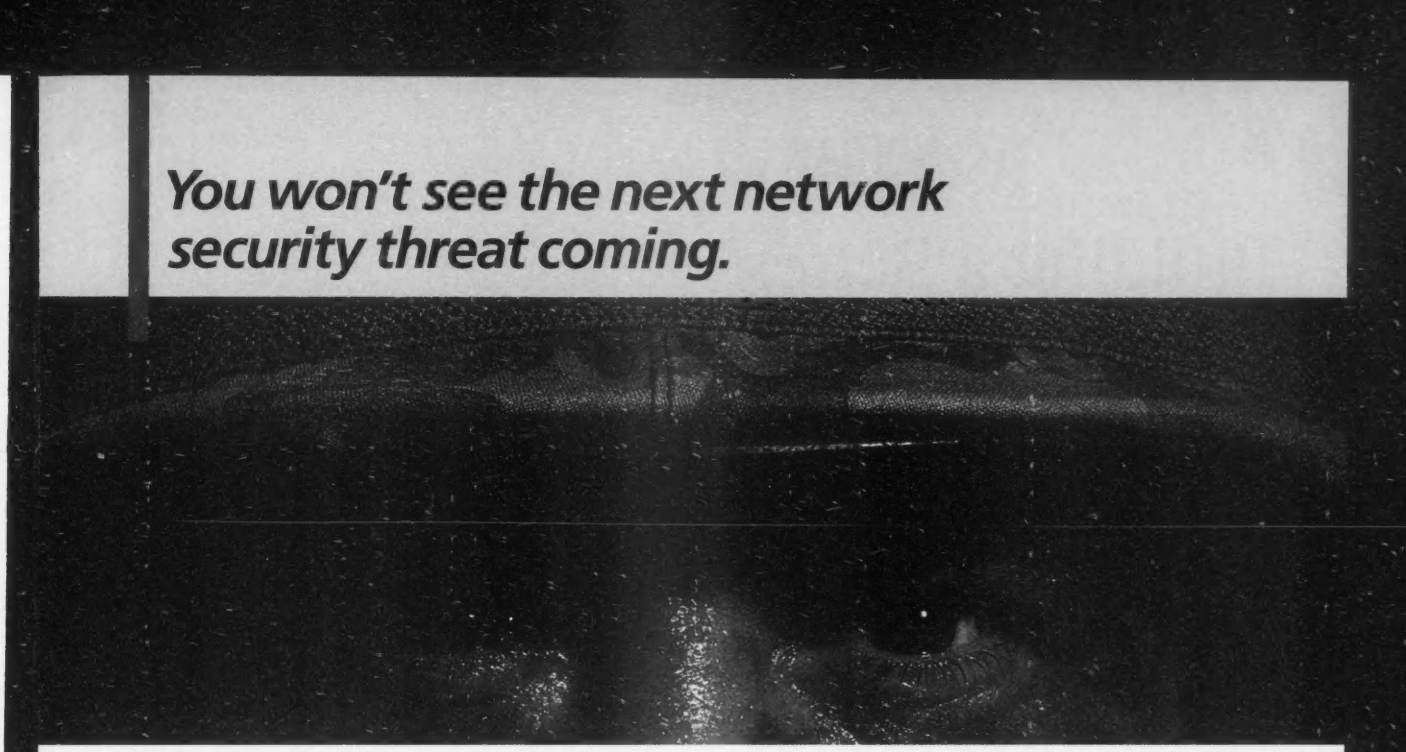
www.nbnn.com/news/01/168823.html: This story tells how Emulex Corp. in Costa Mesa, Calif., lost $2.2 billion in market capitalization through a stock manipulation because it didn't have effective electronic signatures for its documents. But at least the attacker got 44 months in jail.

www.techlawjournal.com/internet/20000703.htm: Look here for the legal mumbo jumbo behind the Electronic Signatures Act.

Quick Link: For more on the Security Manager's Journal, including past journals, visit: **www.computerworld.com/q?q2000**

■ This week's journal is written by a real security manager, "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vince.tuesday@hushmail.com or go to the Security Manager's Journal forum.

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HARRIS

Building a Better Virtual Private Net

Virtela's service promises to reduce the hassle, cost of creating and running VPNs

BY DAN VERTON

VIRTUAL PRIVATE networks (VPN) are difficult to do right, so users tend to look for an experienced vendor that will be around for the long term. That could make it hard for a start-up offering VPN services. But Virtela Communications Inc. faces few of the challenges that hamstring most start-ups. In addition to attracting some of the biggest names in information security as investors, Virtela brings a seasoned management team and offers a unique approach to providing VPN services.

Vab Goel, the company's chairman and CEO and a former executive at Denver-based Qwest Communications International Inc., says Virtela is building one of the world's largest IP networks, with more than 10,000 access points worldwide. Along the way, the Greenwood Village, Colo.-based company has focused on performance through optimized routing services and on keeping costs down by leasing existing wholesale network capacity.

The goal is to enable users to "experience the public network with the reliability, performance and security of the dedicated private network," says Goel.

Direct Access

The firm's centralized approach to VPN services gives customers direct access to network statistics, service order entry, integrated billing, trouble reporting and online support, user and role administration, client management and a single point of contact for support, according to Goel. Virtela also offers videoconferencing and voice over IP services as part of its VPN offering.

Early users have responded positively to the service. AnalytX Inc. needed a secure, cost-effective way to connect employees at six offices around the world. The software development company briefly considered doing the project in-house, but it instead chose Virtela's service because of the vendor's centralized approach to providing service and support, says Mark Dellasanta, regional director at AnalytX in Boston.

Dellasanta, who is planning to add the VirtelaVoice videoconferencing service on top of his VPN, says he's pleased with Virtela so far.

"They have been nothing but professional, organized and efficient throughout our entire process," he says.

Wireless service provider Winphoria Networks Inc. needed a cost-effective way to give remote research and development staff in India and Spain access to sensitive corporate resources, such as e-mail and intranet applications, at its headquarters in Tewksbury, Mass.

Traditional wide-area network circuits, such as frame relay, would have been too costly, says David Heafey, IT director at Winphoria. "Virtela was able to stage and ship VPN appliances to these locations very quickly," he says. "They spend the necessary time upfront to design a VPN infrastructure that fits the requirements of the customer."

Heafey says he has experienced no unplanned downtime since starting the service and that "performance is always within a couple of percentage points of my contracted bandwidth."

Virtela's ability to tackle global VPN projects while maintaining a customer-centric approach makes the company unique among start-ups, according to Zeus Kerravala, an analyst at The Yankee Group in Boston. "They approach each engagement almost as a consultant would, where they do a network audit and review of business processes," he says.

Although Virtela has done a good job of using bandwidth from other providers, "IT managers are now starting to look at the financial strength of the service providers, and using [a start-up] might seem more risky than it did before," Kerravala says. Although Virtela is financially strong, "clearly, their No. 1 focus right now should be to get some marquee client wins," he says.

That point isn't lost on Goel. "We know that more money doesn't guarantee success," he says. "You build a business that scales with the customers."



[Virtela's goal is to let users] experience the public network with the reliability ... of the dedicated private network.

VAB GOEL, CHAIRMAN AND CEO

COMPUTERWORLD emerging companies

Virtela Communications Inc.

5680 Greenwood Plaza Blvd. Suite 200
Greenwood Village, Colo. 80111
(720) 475-4000

Web: *www.virtela.net*

Niche: Low-cost, global IP-based VPN services

Company officers:
- Vab Goel, chairman and CEO
- Ted Studwell, vice president of engineering and strategy
- Mark Hansard, vice president of systems and security
- Jian Li, vice president of technology and operations

Milestones:
- April 2000: Company founded.
- October 2000: First customers signed on.
- April 2001: Received $35 million in funding.
- October 2001: Service officially launched.

Employees: 75

Burn money: $75 million from Norwest Venture Partners, New Enterprise Associates, Palomar Ventures and others

Pricing: VPN service starts at $300 per month, per site; $25 per dial up connection and $100 per broadband connection. VirtelaVideo videoconferencing service and VirtelaVoice voice over IP service are included with Virtela VPN.

Customers: Winphoria Networks, AnalytX, AT&T Wireless Services Inc. and others

Red flags for IT:
- Virtela still lacks large, corporate accounts for references.
- The start-up faces increasing competition from other service providers.

[the buzz
STATE OF THE MARKET]

IP VPNs on The Upswing

IP-based VPNs are on a roll. About 75% of large U.S. organizations have either already deployed an IP-based VPN or plan to deploy one within the next two years, according to Cahners In-Stat Group in Newton, Mass.

IP-based VPN services are replacing Asynchronous Transfer Mode/frame-relay data VPN services because they cost less and provide faster provisioning of service, improved security and greater ubiquity of service, says Cahners analyst Henry Goldberg.

Virtela faces competition from VPN hardware and software providers, such as Cisco Systems Inc., and service providers, such as Reston, Va.-based XO Communications Inc.

What sets Virtela apart is its consulting approach to VPN sales, and the reliability and performance that a provider with multiple backbone networks can offer, says Zeus Kerravala, an analyst at The Yankee Group.

"They sell backbone connectivity using a multitude of carriers," Kerravala says. "However, if you go with a single carrier, you may not always get optimum routing. That does provide Virtela an advantage."

Virtela's direct competitors include the following companies:

Savvis Communications Corp.

Herndon, Va.
www.savvis.net

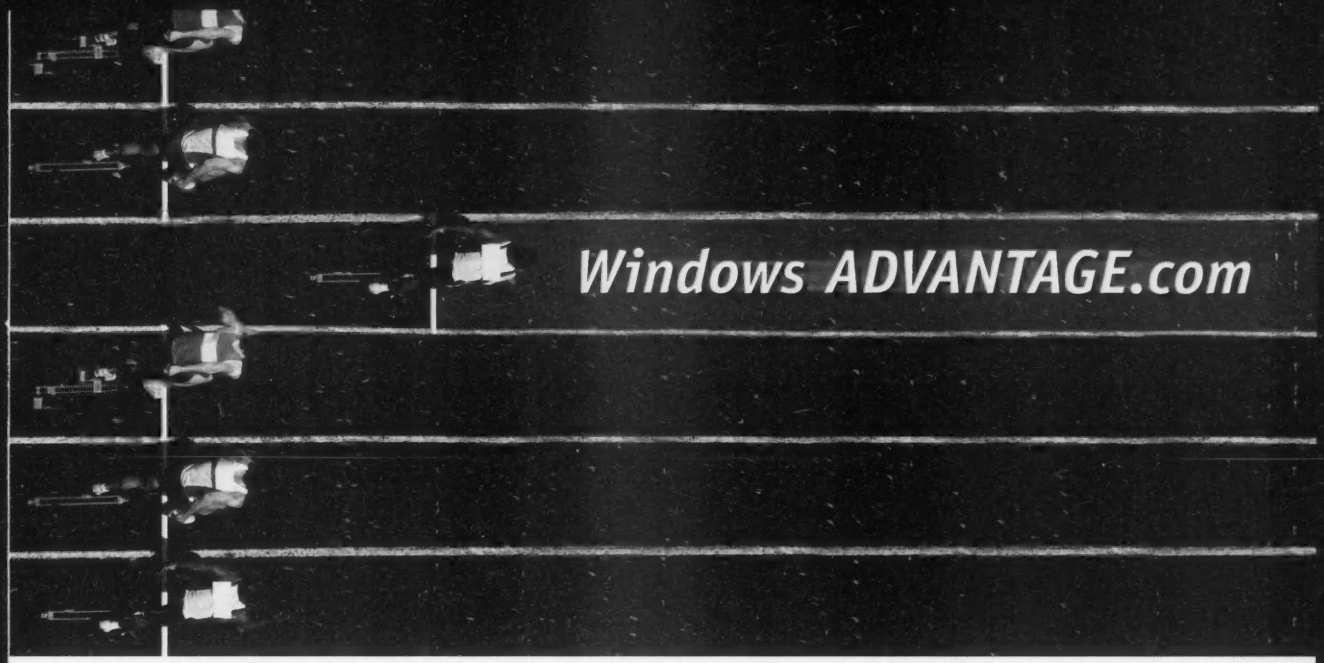
Rather than relying on the public Internet to provide VPN connectivity, Savvis uses private leased lines and says they offer a higher level of security. All routing and firewall operations are on the Savvis network, eliminating the need for the customer to provide a supplemental security infrastructure.

Internap Network Services Corp.

Seattle
www.internap.com

Like Virtela, Internap offers its VPN service on top of existing carrier networks. Internap has access-point facilities in eight cities and, like Virtela, offers intelligent routing-optimization technology.

– Dan Verton



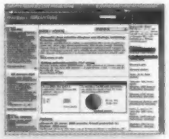
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IT Careers in Security

Every cycle of the economy tends to produce some opportunity, and such is the case with information technology security. Even prior to Sept. 11, companies were examining how to stage themselves for a new understanding of business conducted via 1s and 0s. With the addition of national security to the mix, IT security represents one of the most formidable areas of growth for IT careers for 2002.

Jerry Lewis, a partner in Dallas with **PricewaterhouseCoopers**, says the IT security business has been picking up for the past eight months. "With the slowdown in the economy, a lot of companies are stepping back and looking at what they want in terms of their long-term position with e-business," says Lewis. "For many, that means developing a security infrastructure that will support growth."

According to Lewis, IT security was viewed, in the past, as a back office operation. That has changed, as security and identity management have become crucial aspects of an e-business operation. Similarly, government agencies are pushing the envelope in establishing identity recognition and management systems for everything from basic public agencies to airport security. Identity management includes authentication, authorization and managing access of employees and business partners.

And, while security is the critical focus, Lewis says IT security has other uses. "Companies need to be able to take advantage of what security and identity management can do for them as a component of their e-business strategy. They need to be able to leverage the information and capabilities enterprise-wide," Lewis explains.

PricewaterhouseCoopers has long had a dedicated security practice within its Global Risk Management Solutions unit. The group focuses on analyzing, designing and implementing identity management solutions. The dynamic situation in identity management and IT security is presenting new opportunities. "We will double the size of our group over the next 18 months," Lewis says. "We'll be hiring at all levels, from detail technical architects to individuals who are experienced with IT security management. In addition to the strong IT skill sets traditionally needed, we look for people with a strong understanding of business processes and operation."



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For more job opportunities with IT security firms, turn to the pages of ITcareers.

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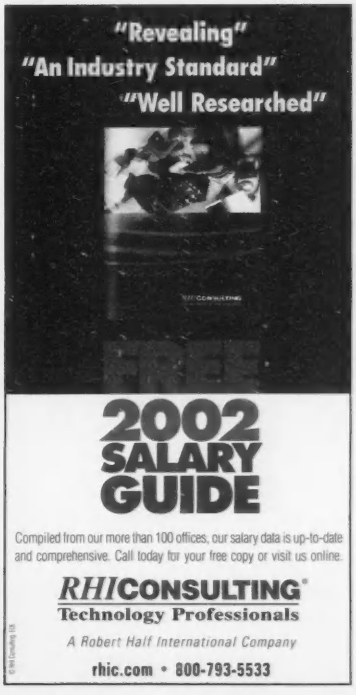
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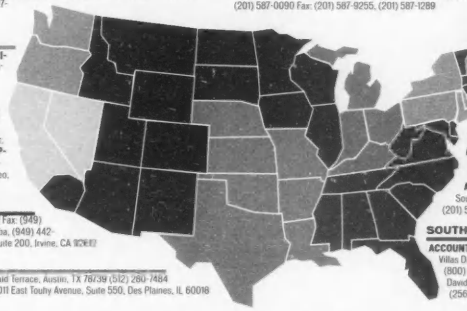
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Trading

Many IT executives attending a special Wall Street breakfast meeting on the topic last week answered yes.

"The business case is $18 billion in savings over five years [for the industry]," said Steven Crosby, special adviser to GSTP AG, a Switzerland-based operating company for the Global Straight Through Processing Association (GSTPA). "This is about operational risk in the marketplace. Trades fail because [the information] is dirty."

Crosby was joined at the meeting by IT executives from New York-based Lehman Brothers Holdings Inc. and Paris-based Societe Generale Group. The IP-based network is expected to go live by June, said Crosby. The final phase of the pilot will take place through March and involve real trade data being exchanged among Wall Street firms across a virtual private network.

Thirty-three financial services firms, including BNP Paribas Private Bank in France, The Bank of New York Co., Goldman Sachs Group Inc., J.P. Morgan Chase & Co. and Credit Suisse First Boston Corp., have been piloting the utility since June.

Once coding of the system is completed in the next few months, GSTP's model will be capable of matching trades in 30 minutes, said Crosby.

But as recently as October, the Securities Industry Association moved the target date for the launch of T+1, or trade plus one day clearing, from 2004 to June 2005, citing the Sept. 11 attacks and the fact that many brokerage houses and banks are focusing more on business continuity planning than on shortening settlement times.

That leaves many IT managers skeptical about whether T+1 is viable, never mind T+0, or same-day settlement.

"We're trying to discover why trades are being held up. You need to look at all the interfaces making that happen," said Denis Kosar, vice president of global databases and architecture at Salomon Smith Barney Holdings Inc. "One problem is a lot of brokerage houses haven't done a good job in workflow analysis."

Drew Hiltz, CIO at French bank CDC Ixis' North American operations, said going from three days to a single day for clearing and settlement would alleviate credit risks created by waiting for banks to clear transactions. But there must be a meaningful ROI to do it, Hiltz added.

"It can be done, but the question is, Should we do it?" he said. "I don't know. I think the business guys need to figure that one out."

Crosby agreed, but he argued that financial services firms still must tie together their respective IT infrastructures with middleware and adopt a common messaging format, regardless of whether the industry moves to T+0. Otherwise, they will continue to experience double-digit rates of message failure on high-volume trade days.

"This is not about a date on a calendar," Crosby said. "People who are not making that kind of IT investment will eventually start losing market share. They will be acquired."

The Skinny on Trade Settlement

- **T+3** means "stock trade plus three days" for clearing and settlement.
- Currently, payments take **three days to clear** because IT and the reporting systems aren't robust enough to handle anything faster.
- The financial services industry had planned to move to T+1 settlement by 2004, but the **Securities Industry Association** recently moved that target date to June 2005.
- Some in the financial services industry feel it's just as **easy to move** from T+3 to same-day clearance, or T+0, as it is to move to T+1.
- Wall Street needs to **upgrade its technology** infrastructure and business processes that link brokerages, clearinghouses and banks, providing a nonstop flow of information from trade execution to settlement in order to handle real-time settlement.

Banks Migrate To Middleware

Lehman Brothers has spent millions of dollars over the past year to replace its point-to-point communications infrastructure with a publish-and-subscribe messaging one using Palo Alto, Calif.-based Tibco Software Inc.'s middleware and messaging platform.

Peter Belina, vice president of real-time infrastructure at Lehman Brothers, said the investment bank is seeing ROI from the project in terms of increased efficiencies, better customer service and not having to hire 20 more IT workers to maintain an older IT system that it had used.

"Doing things point-to-point on a large scale just becomes unwieldy. When you have a point-to-point connectivity . . . it starts to break down at a certain level because you have to keep track of all the connections," Belina said.

Lehman Brothers purchased six new servers for straight-through processing services, 60 servers for its new centralized routing infrastructure and 10 additional servers to support its applications. The firm has already migrated 15 major trading systems to the new infrastructure and implemented 25 new applications and 40 Tibco-based systems. It plans to complete the upgrade during the next two months.

Sylvain Pendaries, director of IT for capital markets at the New York-based arm of French bank Societe Generale Group, said it has completed an upgrade similar to Lehman Brothers' using Tibco software.

"I think one mistake everyone's making is thinking T+1 or T+0 is a technical problem," Pendaries said. "The information is available internally and externally. But the question is, Do you think your business processes are ready to handle the volume?"

– Lucas Mearian

Sun Won't Support Intel Chips in Solaris 9

Change in plans aims to cut costs

BY LEE COPELAND

Citing the need for cost-cutting measures, Sun Microsystems Inc. confirmed last week that it's dropping support for servers based on Intel Corp.'s microprocessors in its upcoming Solaris 9 operating system.

Sun plans to ship Solaris 9 by midyear. Its Solaris 8 software supported both Sun's own 64-bit UltraSPARC processors and Intel's 32-bit Pentium chips. But Sun officials said the cost of porting Solaris 9 to both processor sets is too high under current business conditions, so the computer maker is giving Intel the boot.

"This is about focusing on the bottom line," said Graham Lovell, director of Solaris product marketing. "Solaris Intel is not going away," Lovell added. "We will continue to ship and support Intel chips on Solaris 8."

But Lovell also said Sun hasn't determined when or if it will continue development for the Intel chip set on Solaris 8. He estimated that it would take four to six months to complete that work, which would include updating the source code for peripheral products and new PC features.

In March 2000, Sun began offering Solaris 8 as a free download to customers with systems that had fewer than eight processors. Officials said that more than 1.2 million customers have downloaded the software and that most of them are using Solaris 8 on Intel-based systems.

"Sun is looking at a changed market, where they must be more prudent in use of scarce engineering dollars and resources," said Dan Kusnetzky, an analyst at IDC in Framingham, Mass. But Kusnetzky also said Sun's share of the Intel-on-Unix server market was always slim and therefore too small to justify the continued expense.

Gordon Haff, an analyst at Nashua, N.H.-based Illuminata Inc., noted that many of the users of the Intel/Solaris software were educational users and hobbyists and that he doesn't expect much negative feedback from corporate users about the Sun move.

"Solaris on Intel chips has not been a strategic offering from Sun for a number of years, but the easiest thing for Sun to do was to continue offering it," said Haff.

"Sun was looking for cuts that could be made without affecting strategic programs, and Solaris on Intel's number came up."

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FRANK HAYES/FRANKLY SPEAKING

Security, Now!

YOUR COMPANY NEEDS an IT security czar. Reporting security breaches should be mandated by federal law. And Congress should consider making software vendors liable for security holes in their software.

Those are the main conclusions of a report released last week by the National Research Council called "Cybersecurity Today and Tomorrow: Pay Now or Pay Later."

"What?" you say. "A big push for improved IT security? Now? In the middle of a recession? Are these people crazy or what?"

No, they're not crazy.

You should read this report. You don't really have an excuse not to — the main body of the report is less than 6,000 words long, and it's free on the Web at *http://books.nap.edu/html/cybersecurity*. It's light on institutional jargon and heavy on useful information. It lays out an awful lot about why we've got the security mess we're currently in, what's standing in the way of fixing it, what hasn't worked before and what should be done now.

It's bluntly realistic about the reasons why businesses and government agencies have dodged the need for better IT security. As the report puts it: "Security is expensive, not only in dollars but especially in interference with daily work. It has no value when there is no attack. Consequently, people tend to use as little of it as they think they can get away with."

And it makes no bones about the fact that there's no conventional business case or ROI argument to push for better security: "One can't count on financial and market incentives alone to drive appropriate action."

In other words, security is something like Y2k — except with no do-or-die deadline to spur action. Like Y2k, the only reward for fixing security problems is that you get to stay in business. Except that in the case of security, zero hour isn't Jan. 1, 2000. Zero hour only arrives if you're attacked — which might never happen.

Six months ago, that fact alone probably would have guaranteed that any proposal to significantly beef up your security would never make it past your CEO's desk.

But it's not six months ago. And since Sept. 11, nobody believes security is still just a matter of dealing with e-mail viruses and hackers.



FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

Since Sept. 11, it's easy to see how cyberterrorists could amplify the effects of physical acts of terrorism. They could disrupt communications, sow confusion, misdirect rescue efforts — and cost lives. They could also hijack insecure systems to attack critical infrastructure.

Even your CEO can understand that. Which means that improving security doesn't sound like such a crazy idea.

And ironically, right now — in the middle of a recession — is exactly the right time to go to work on the problem.

At most companies, there won't be any major business initiatives for a while. Big IT projects are on hold. Things are slow. There are people and time available to do the work.

A recession is also when any business can *least* afford the cost of a major security catastrophe. And because many security improvements don't involve capital expenditures — just a lot of time and work — they're budget-friendly.

So improving your security, starting right now, is beginning to sound downright sane to people like your top brass.

Will you get that IT security czar? Not until budgets loosen up. And you won't get to replace passwords with smart cards, or hire a team of outsiders to attack your systems and find vulnerabilities, or try some of the other more expensive recommendations in "Cybersecurity Today and Tomorrow."

But there's still plenty you *can* do. So read the report. Then start crafting a plan for improving your security — one you can implement right now — with a rationale your CEO can understand.

You may just find that, right now, there's nothing crazy about that at all.

SHARK TANK

USER CALLS help desk – her spreadsheet keeps giving error codes, she says. Investigating, pilot fish spots the problem: User was entering telephone numbers into the spreadsheet. Fish types "123-4567" into a cell, and the "error code" that shows up is -4444. "See, when you subtract 4,567 from 123," fish says gently, "you get -4,444."

IMAGE FILES e-mailed from the European office won't open, user complains to tech pilot fish. Most likely, the attachment got corrupted, but user has his own theory. "It probably has to do with the difference in electricity," he tells fish. "In Europe, they use 220 volts, and we use 110."

AT HER FIRST Cub Scout meeting, IT pilot fish introduces her sons to another scout's dad. "Are you in programming?" asks the dad. "Yes," fish answers. "How did you know?" He points to the troop number on the boys' sleeves. "You zero-filled it," he says – 0263 instead of 263.

PILOT PROJECT isn't going well – the servers require a reboot every six hours. Tech pilot fish is working on the problem when IT director decides to help. Peering over fish's shoulder, director says, "There's the problem. 'System Idle' is eating up 98% of the resources!"

TROUBLESHOOTING a user's PC, pilot fish spots a nonbusiness file on her desktop. "It's for a school course," user explains. "I just downloaded it here so I can e-mail it home." Why? fish asks. "Because it's a 300MB file, and it's too slow to download it with my modem at home." Fish reports, "It almost broke her heart when I told her she has to download that same exact file from the e-mail server with that same slow modem."

Upload your story: **sharky@computerworld.com**. You can score a snazzy Shark shirt if your true tale of IT life sees print – or if it shows up in the daily feed at *computerworld.com/sharky*.

The 5th Wave



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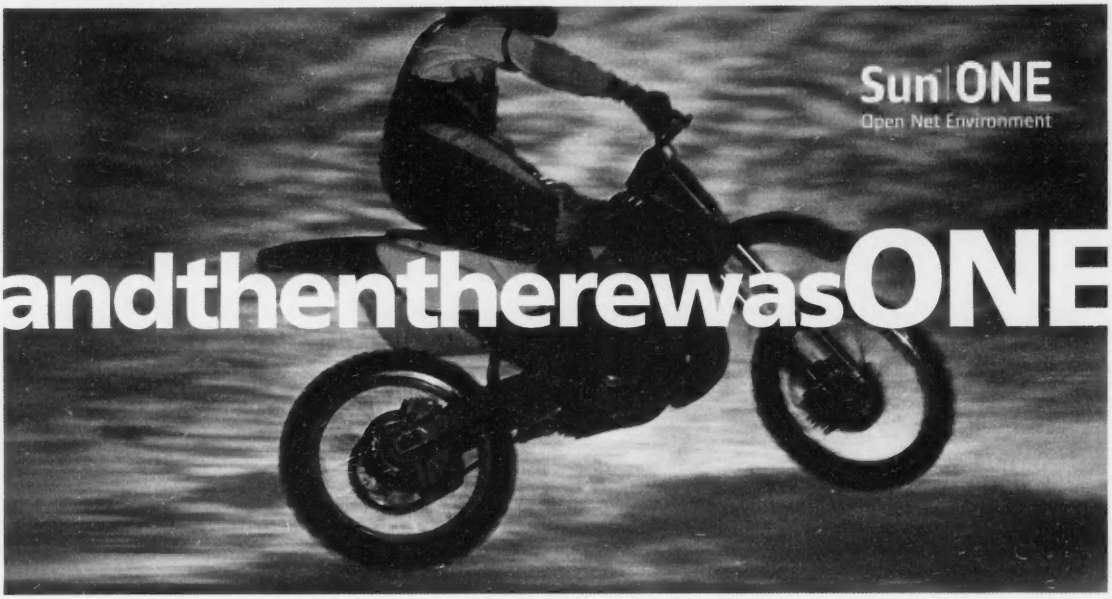
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